ISASC

EQUILIBRIUM®

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2008 ISSUE NO. 1

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Cover Picture

This unusual postal scale, with its rack and pinion mechanism and a circular dial, is believed to have been a gift as it is engraved on one side of the base E H Forry and on the other side is engraved Sept. 27, 1904. The surname is rare, but no trace of E H Forry has been found. The scale appears to have been gilded, is 9¼" tall and 7" wide. The Art Deco-style base measures 5½" wide and the dial and letter plate both measure 5¼" in diameter.

Collection of Jacqueline & Oliver Sapp

More information on circular dial scales may be found in the article "Scales With Circular Dials" by Rein Kok on pages 3323-3325 of this issue.

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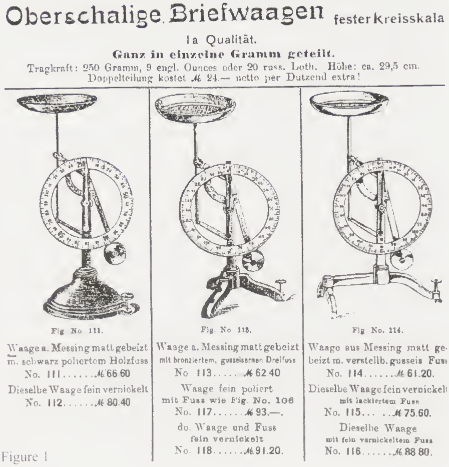
Scales With Circular Dials

BY REIN KOK

Pendulum scales are very common in Europe. The largest maker of these scales was the firm P J Maul at Hamburg (Germany). The firm was founded in 1874. In the beginning Maul produced very large quantities of scales, especially pendulums. A great number of these scales are pictured in his catalog of 1909. The scales were obtainable in several sizes and with different weight-graduations. Lots of these scales have been spread over Europe. Even now you still can find these scales at antique fairs.



Oberschalige Briefwaagen fester Kreisskala

Ia Qualität.

Ganz in einzelne Gramm geteilt.

Tragkraft: 250 Gramm, 9 engl. Ounces oder 20 russ. Loth. Höhe: ca. 29,5 cm.
Doppelteilung kostet ℳ 24.— netto per Dutzend extra!

Fig No 111.

Waage a. Messing matt gebeizt
m. schwarz poliertem Holzfuss
No. 111 ...... ℳ 66 60
Dieselbe Waage fein vernickelt
No. 112 ...... ℳ 80.40

Fig. No 113.

Waage a. Messing matt gebeizt
mit bronziertem, gusseisernen Dreifuss
No 113 ..... ℳ 62 40
Waage fein poliert
mit Fuss wie Fig. No. 106
No. 117 ...... ℳ 93.—.
do. Waage und Fuss
fein vernickelt
No. 118 ...... ℳ 91.20.

Fig No. 114.

Waage aus Messing matt gebeizt m. verstellb. gusseis Fus
No. 114 ...... ℳ 61.20.
Dieselbe Waage fein vernickel
mit lackiertem Fuss
No. 115 ..... ℳ 75.60.
Dieselbe Waage
mit fein vernickeltem Fuss
No. 116 ...... ℳ 88 80.

Figure 1

The catalog also pictured an oddity: a pendulum scale with a circular dial and a rack and pinion. Maul produced this scale with three different pedestals (fig.1) and with three different weight-indications: gram-ounce-loth (a Russian weight). The dial runs to 250 grams.

In figure 1 the scales have a bent rack immovably fixed to the pendulum. Later on Maul made this scale with a straight rack, movable, fixed to the pendulum (figure 2). The pinion is fixed to the pointer with an axis through the pillar (figure 3). The dial is fixed to the pillar with two screws. The dial has a diameter of 13.2 cm. and the scale is 29 cm tall. This scale is very rare. I bought it about 15 years ago and since then I have never seen another one.

A second one with a circular dial (figure 4) is a design of Balduin Heller's Söhne of Teplitz (Bohemia, now in the Czech Republic). Figure 5 shows the patent drawing. It is a bilateral pendulum scale.

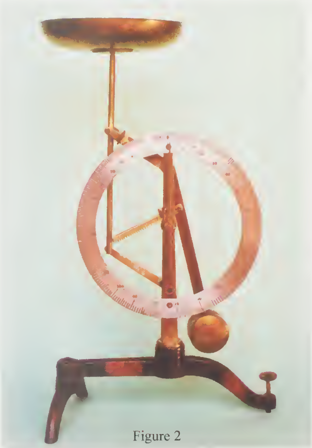


Figure 2

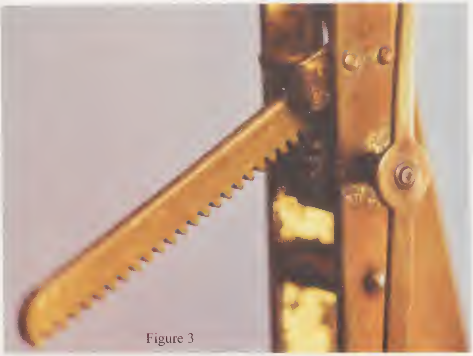


Figure 3

Figure 4

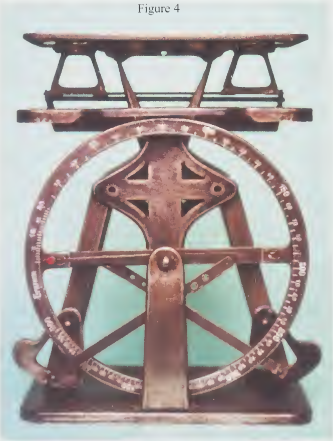
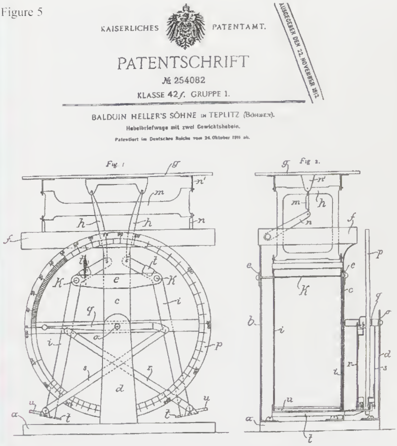


Figure 5



KAISERLICHES PATENTAMT.

AUSGEGEBEN DEN 22. NOVEMBER 1912

PATENTSCHRIFT

№ 254082

KLASSE 42*f*. GRUPPE 1.

BALDUIN HELLER'S SÖHNE IN TEPLITZ (BÖHMEN).

Hebelbriefwage mit zwei Gewichtshebeln.

Patentiert im Deutschen Reiche vom 24. Oktober 1911 ab.

Fig 1
Fig 2.
g
n'
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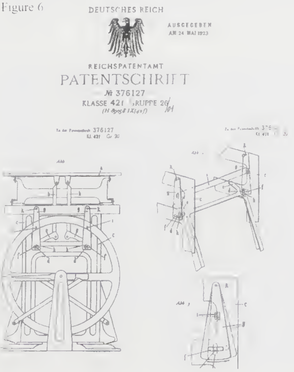
The circular dial turns (when loaded) in the opposite direction to the pointer. It is a very nice system. To understand how it works you have to play with it!!!. It is patented in different countries. On the base different patent-numbers are punched .

OEST.P.A. - Austrian Patent Applied for

UNG.P.56898 – Hungarian Patent

DRP 254082 = Deutsches Reich Patent

Figure 6



DEUTSCHES REICH

AUSGEGEBEN AM 24 MAI 1923

REICHSPATENTAMT

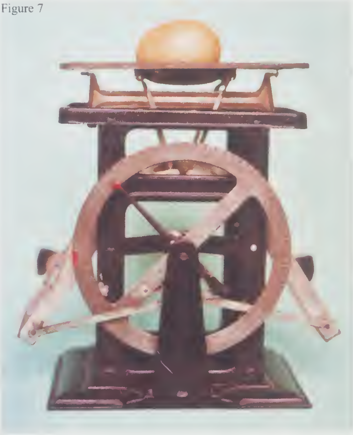
PATENTSCHRIFT

№ 376127

KLASSE 421 GRUPPE 26/01

(H 89058 IX/42f)

Figure 7



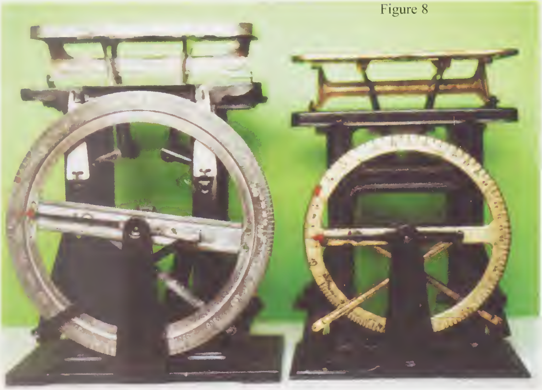


Figure 8

The number of the DRP is pictured on the patent-drawing (figure 5). The patent was granted on October 24, 1911 and published November 22, 1912. The scale runs to 500 grams. I have never seen other graduations. The dial has a diameter of 15.5 cm. The scale is 21.2 cm tall.

A third model is pictured on the cover of EQM Spring 1981 (pages 317-318). It is a design of Julius Heller of Teplitz. I don't know the relationship between Balduin and Julius but I presume they are father and son. The patent of this scale is dated later: it was granted March 11, 1922 and published May 24, 1923. It has the patent number 376127 (figure 6). These scales exist in three sizes: 350 - 500 - 1000 grams (figure 7 and figure 8.) The scale of 350 grams is also an egg-scale: there is a depression on the top-plate to hold the egg. Scales with 350 grams graduations were specially made for the French market, because by the French Weights and Measures Act of June 26, 1906, scales under 350 grams were not inspected by the government. For that reason many French scales have graduations to 350 grams. The 500 grams scale (figure 8, right) was used by the Dutch Post until about 1947 and then replaced by the Velthoen scales (EQM 3230-3234).

Capacity	**Height**	**Width**	**Circle Diameter**
350 Grams	22 cm	16 cm	13.2 cm
500 Grams	22 cm	16 cm	13.7 cm
1000 Grams	24.5 cm	24.5 cm	18.1 cm

Notes & Queries

FROM VERNON DENFORD

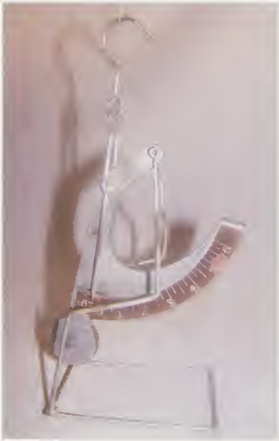
N & Q NO. 157

As found, this Pendulum Postal Balance is made from wire and tin plate, with a copper graduated arc, divided 0 to 6 oz x $^{1}/_{4}$ oz divisions. It is painted in a silver metallic paint which does not appear to be original.

There are no other markings, therefore: maker unknown.

Length, from extreme top of the hook to the bottom/back corner of the letter cradle while hanging is 210 mm, width of the wire letter cradle 65 mm, length 90 mm, while the body of this scale is 6mm wide. The counterweight is solid but the body of this scale seems to be hollow.

Can anyone identify the maker and origin this scale?



Sales Aids & Awards

BY DAVID MATTHEWS

Following on from John Knight's excellent article I would like to add and continue on with the items I came across during my 40 years selling weighing machines to all known forms of Industry from 1967 to the present.

It was recognised by W & T Avery Ltd during the 1960s that of 467 known forms of Industry in the UK some 452 (give or take) used weighing machines of some sort or another. The prolific number of weighing machine companies competing for the market were forever dreaming up ways to increase their share of the market. After WWII, W & T Avery introduced 5 year guarantees, as a sales gimmick - something we are now very aware of when buying electrical goods! In W & T Avery's case, it was because delivery times were up to 2 years!! At decimalisation, W & T Avery introduced them again, and confirmed free conversion to metric units on or after 15th February 1971. I remember selling a new scale to a grocer in Worthing, and trading in his 20 Semi Self Indicating Model 1301BCA for a 1304BCH, including a 5 year warranty; he then produced the 5 year warranty card his father had kept from the original sale! He gave me this card, green cover and pale yellow pages, but where it is now, I do not know.

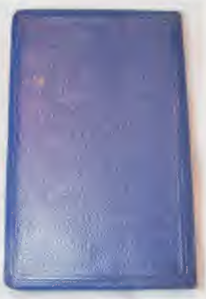
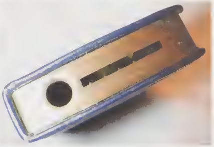


Figure 1. ↗ ↗ A book safe (mid 60s) that Avery sold to the sales reps. for 2/6d. [equivalent to £4.50 today]



The retail sales representatives would target the barrow boys and traders of Spitalfields, Petticoat Lane, Surrey Street Market, Billingsgate Fish Market and Smithfield's Meat Market in London. Each major city and town would have, to a lesser or greater degree, similar markets. When a new scale was required, or was needing a repair, the sales rep. would let the trader have a money box without the key. Each week he would call round, open the money box and issue a CSV (Cash Sales Voucher) for the amount, until enough money to buy the scale, or to pay for the repair, had been reached. In the event of a sale, the trader kept the money box and of course the key. Many Banks and Building Societies did similar items - today there were 928 money boxes on Ebay, half of them book or Bank type. Nearly all have the key missing for the reasons mentioned, and also because the Banks and the Post Office kept the key. In my experience each one could be opened by the same key, but I believe the earlier numbered ones had individual keys.

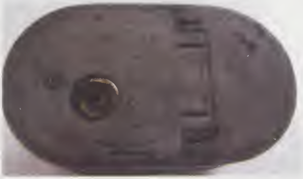
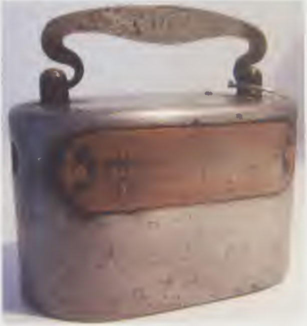


Figure 2. ↘ ↗ Mattocks Scales 1920s Bank Safe. This early 1920s Bank Safe was issued by Mattocks Scale Co. 240 Walworth Rd, London SE 17 This one, and others made by Taylor Law, were known as TaLa Banks. This one has a hinged flap opening.



Again a small 4.5" x 3.5" x 2.5" Bank Safe to encourage people to save for a new scale or repair, (Source Safe Saving by Brin Thomas published by Portway Collectables e-mail editor@portwaycollectables.co.uk).

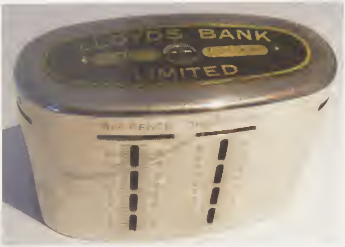


Figure 3. ← ← Lloyds Bank Ltd Recording Home Safe, with chromed finish. This late-1920s Bank had the facility to show all the coins saved from 1p to half a crown (2/6d). These Home Safes were issued free from the various financial institutions to encourage people to *help you to an independency* 4% tax paid on amounts to a whole £1. Manufactured by:- Automatic Recording Safe Co Ltd London WC 1.

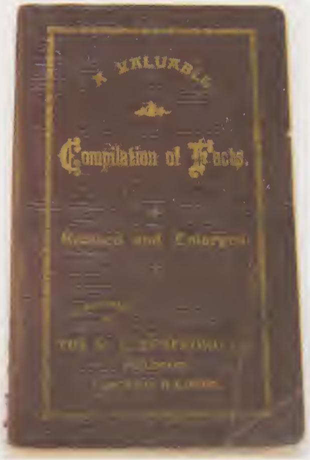


Figure 4. → → The W C Spafford Scale Co Chicago Illinois, Salesman's and Dealers *Compilation of Facts* pocket book circa 1895. A letter copied inside from the Govt. House Ottawa, Canada, states that the "Spafford Improved Standard Platform Counter Scale" had been added to the Schedule of Scales for verification under revised Canadian W & M statutes and advice from Queen's Privy Council for Canada. (1889).

This previously-unknown (to me) scalemaker, by the the end of the 1800s, was one of the most prolific makers in the USA. Stating they had sold, in Canada alone, over 1,000 each of their Nos 1 and No 2 Counter Grocers' Scales, 120 Lbs and 200 Lbs, since 1889. Every scale sold had one of these books inside the shipment package.

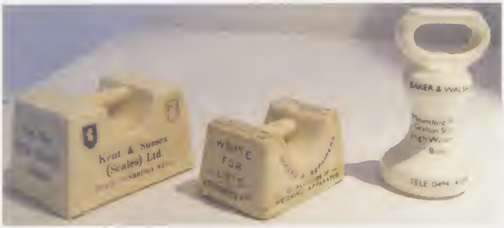


Figure 5. ↑ ↑ Paper weights: Left . Kent & Sussex Scales Ltd Pottery Bar weight. 100 issued in 1988 to celebrate the Company's 10th anniversary. This was my own Company, sold in 2003 but still trading. Middle. Day & Millward late-1800s porcelain Bar Weight advertising all their services:- Quotes for New, Hire, repair and their address as well as service contracts. Right. Bell Weight issued to celebrate 70 years by Baker and Walsh, 1918 to 1988, sadly, closed around 1994.

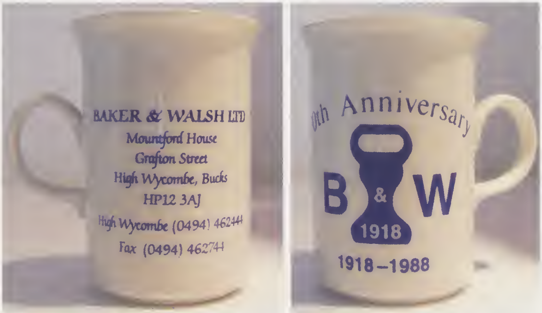


Figure 6. ↑ ↑ Mug was issued to dealers in celebration of 70 years, 1918 to 1988, by Baker and Walsh. Baker and Walsh were scale trade suppliers.

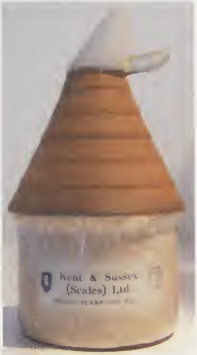


Figure 7. → → Oast House issued by Kent & Sussex (Scales) Ltd. Only 50 were made and given to very special customers, family and friends, in 1988.

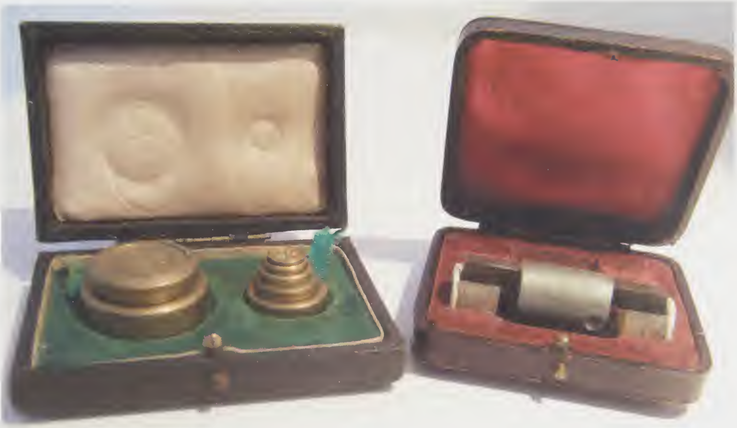


Figure. 8 ▲ ▲ Sales Representives' Aids. Left. W & T Avery Ltd issued Sales representatives, Retail, Composite and Industrial, this boxed set of brass flat weights (unstamped) from 2oz to 1/32 oz. It was not unknown for the more 'vigorous' sales reps. to linish the base of the weights, used for checking self-indicating and semi-self-indicating scales, to make them appear to be slow - thereby the vendor would think his scale needed repair - a service contract or possibly a new scale!

Right. In the 1950s agate bearings became the new buzz word, and this agate bearing with a mazak cast steel knife was given to reps. The knife would be set in motion on the agate and would oscillate for 30 minutes at least, while the rep would bring in the new model to demonstrate. The latest semi-self-indicating scales had 26 of these bearings so it was a powerful selling tool.

Sales Awards

W & T Avery Ltd had many awards and competitions - the local areas (8, I think) would run their own as well as the Annual 45 Club bash. The latter was the supreme accolade. Of about 145 reps, the top 45 salesmen of the year would travel to a European destination for a long weekend, flying out on Friday (day off work) and coming back on Sunday very late, but bright eyed and bushy-tailed for Monday!! The race for 1st, 2nd and 3rd place was a hotly-fought contest

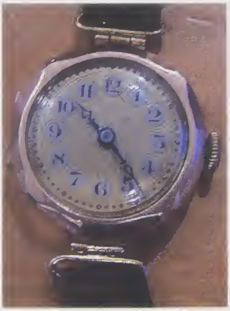
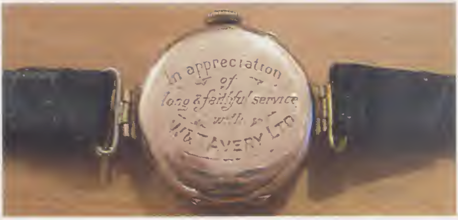
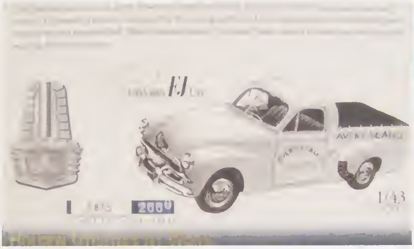


Figure 9. ◄ ▼ W & T Avery Ltd - 1950s Long Service award lady's watch - no name or number of years. The watch back reads "*In appreciation of long & faithful service with W & T Avery Ltd.*"





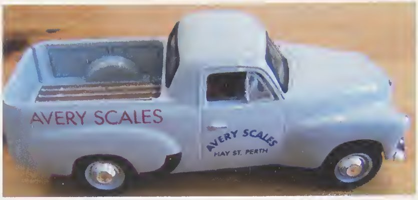


Figure 10. ↖ ↗ W & T Avery Perth Holden UTE with Avery Livery 1/43rd scale. Its box is on the left, recording that this was a limited edition of only 2000 lorries.

all year and March 31st was a deadline by which date all aimed for massive monthly figures. To be named as '*top of the country*' in the following years' diary was a great honour. Typical destinations for the bash were Malta, Genoa, Majorca, Tunis, Ibiza and one year, due to a cock up by the then Home Sales Manager - we all called him the smiling assasin - the venue was double-booked, and we had the ignominy of travelling at the last minute by Ferry to Deauville for the weekend!! A suitable cheque was handed to the winner at the Saturday black-tie dinner.

The Centres had their own incentives - old stock reduced sales with double commission for the month only. Other times you could win parts of a Viners cutlery set; I was lucky to win a whole 42-piece set as shown in Figure 12. Another year the prize was a bank-holiday weekend for four in Paris, which I was lucky enough to win in 1969. We stayed at the St George, off Moulin Rouge, and we had a great time! The following year the Home Sales Manager tried to claw back the tax relief - but I was not having that!

The days of the old Company are missed by many - as the UK weighing ndustry has more-or-less collapsed - everything now being made in China.

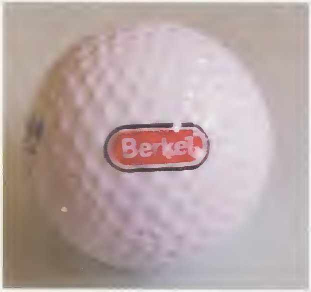


Figure 11. ↗ ↗ A Berkel Logo on a golf ball of the late 1980s.

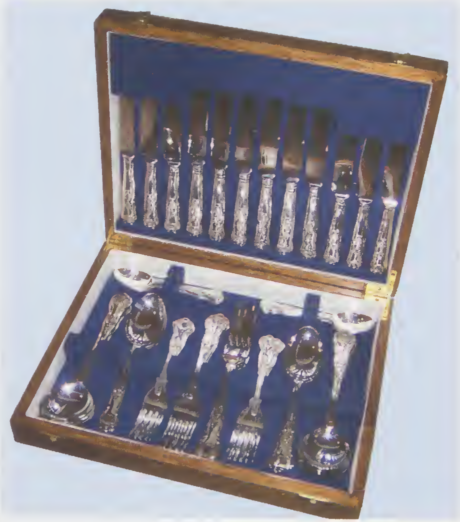


Figure 12. ↗ ↗ A 42 piece set of Viners Cutlery won by the author for selling Avery scales.

Acme Egg Grading Scale

BY BOB JIBBEN

Acme Egg Grading Scales were produced by the Specialty Manufacturing Company of St. Paul, MN. In 1900 William Boss founded the Specialty Mfg. Co. which has a rich heritage in St. Paul, MN, spanning more than a century, and four generations. William Boss, the fourth of eleven children, was born on a farm near Zumbro Falls, MN, on October 7, 1869. He attended the University of Minnesota School of Agriculture, where he demonstrated an aptitude for things mechanical and became a professor at the University. He married Edna Rider in 1895, and they had two sons.[1,2]

Specialty's first products were a grass catcher for a lawn mower, clothesline reel, and garden hose reel followed by several other products including the Acme Egg Grading Scale. In1922 the Acme's inventor N. E. Chapman filed for a patent, referred to as an EGG GRADING DEVICE. In June, 1924, this patent was granted[3] (see Figure 1).

The company was located first on Carter Avenue in St. Paul, behind a hardware store. The second location was on Raymond Avenue, and the third location was 2356 University, St. Paul, MN[3]. This address is found on boxes used to mail the Acme Egg Grading Scales, (see Figure 2). The company manufactures numerous products for various industries and continues in operation today at 5858 Centerville Road, St. Paul, MN 55127. The company chairperson is Heidi Sandberg McKeown, the great-granddaughter of William Boss, and her husband Daniel McKeown is the President. He states: *We are not selling a commodity, we are selling a service. We custom design products and manufacture them for our clients*[2].

My first experience with egg scales started as a child on our farm in South Dakota when I had the responsibility of collecting, washing and weighing eggs. The first question people ask when they see my egg scale collection is why eggs are weighed. People usually haven't considered how the eggs they purchased were classified. As a boy, I weighed and cleaned eggs to increase the price of a dozen eggs by a few cents as I placed them in 30 dozen cases to be sold to grocery stores and egg processors. Table 1 shows the weight classes for consumer grades of shell eggs[4].

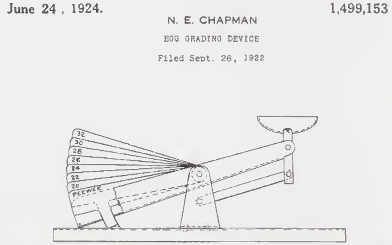


Fig 1 Patent for Acme Egg Scale.

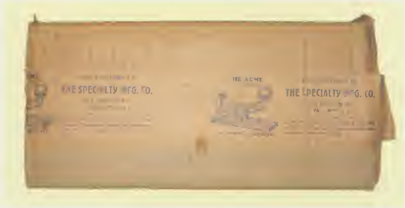


Fig. 2. Box for Acme Egg Scale.

TABLE 1
Weight Classifications for Egg Grades

Size/Weight Class	Minimum Weight per dozen
Jumbo	30 ounces per dozen
Extra Large	27 ounces per dozen
Large	24 ounces per dozen
Medium	21 ounces per dozen
Small	18 ounces per dozen
Peewee	15 ounces per dozen

Although egg scales may have been used earlier, the United States Department of Agriculture (USDA) first addressed egg grading in the Agriculture Handbook No. 75. The handbook states: *The Farm Products Inspection Act of 1917 provided the original authority of establishing grades and grading services for voluntary use*[4].

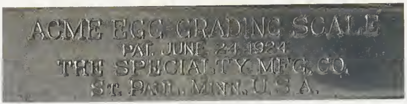
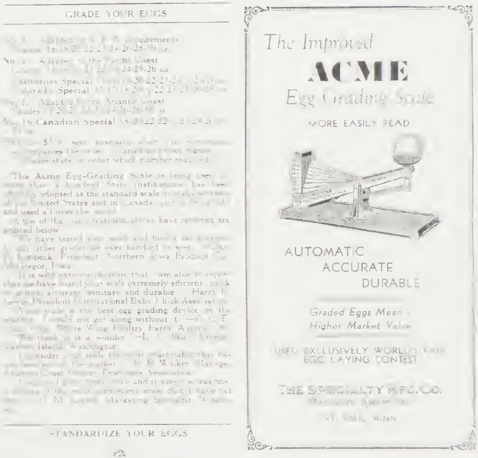


Fig. 3. ➶➶ Name and US Patent date shown on the outermost fin of most Acme Egg Scales. It is stamped ACME EGG GRADING SCALE. / PAT. JUNE 24, 1924 / THE SPECIALTY MFG CO / ST. PAUL, MINN, USA.

The Agriculture Handbook No. 75 also identifies state regulations for eggs: *In 1919, the first State egg laws were enacted in South Dakota, Iowa, and Illinois. The earliest regulations mainly prohibited the sale of inedible eggs. Since then egg laws have been enacted in all of the 50 States. The laws regulate the labeling, grading, and marketing of eggs and reference the U. S. standards, grades, and weight classes*[4].

Acme Egg Grading Scales became more of an interest as I learned they were manufactured in St. Paul, MN, near my home, and after I found a patent date of 1924 (Fig 3). I also discovered more than one set of numbers for weight per dozen on these scales.



GRADE YOUR EGGS

STANDARDIZE YOUR EGGS

The Improved

ACME

Egg Grading Scale

MORE EASILY READ

AUTOMATIC
ACCURATE
DURABLE

Graded Eggs Mean a Higher Market Value

USED EXCLUSIVELY WORLD'S FAIR EGG LAYING CONTEST

THE SPECIALTY MFG. CO.

ST. PAUL, MINN

Fig. 4. ➶➶ Specialty Manufacturing Company advertising brochure.

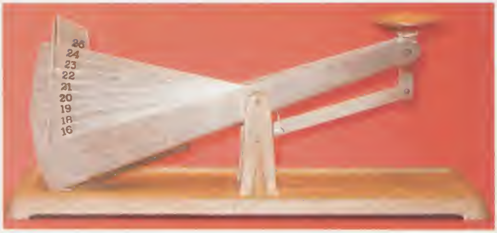


Fig. 5. ➶➶ Acme egg scales are constructed of cast and sheet aluminum. Pre-1933 Acme egg scales were made like this one.

Bill Berning shared with me some information from a friend who had emailed him. He listed different areas that required different weights per dozen. Thus the hunt for scales to match these known differences began. In discussions with Charley Amsbaugh, additional grading ranges and advertising for Acme scales were identified, and the number of known grading ranges is now eleven. Cliff Lushbough provided an advertising brochure from the Specialty Manufacturing Company that identified geographic areas associated with some of the Acme grading ranges (Fig 4).

Earlier Acme egg scales were an all aluminum egg scales (see Fig. 5). Later models have tin bases. The scales work on the weight-lifting principle, with each scale having 9 fins that are lifted to determine the weight of the egg. The weight of the egg picks up individual fins, and it raises the fins until the weight of the egg is reached. The egg cup on the 1924 patent for the Acme scale is generally oval like an egg and is parallel to the scale (Fig. 6). However, some scales have been observed with the cup at right angles to the scale, and they probably were produced after 1933 (Fig. 7). The egg cups are attached with aluminum rivets or with two slots cut in the cup and an aluminum strip holds the cup in

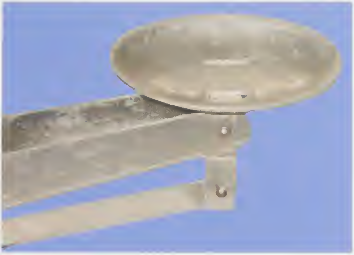


Fig. 6. Egg cup parallel to the scale is attached with tabs.

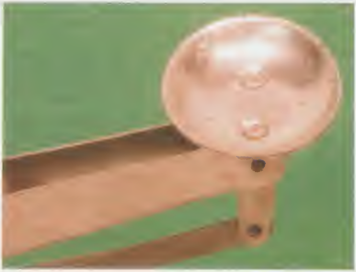


Fig. 7. Egg cup perpendicular to the scale is riveted on.

place (Fig. 6 and 7). The weight shown on the scale is the calculated weight per dozen, not the weight of one egg.

The most common grading ranges for ACME Scales seems to be 19 through 30, but eleven different grading ranges have been observed (see Table 2).

TABLE 2
Grading Ranges for Acme Egg Scales

Weights in Ounces Per Dozen	Area Adapted To
16-18-20-22-23-34-26-28-30	American Poultry Association (APA)
19-20-21-22-23-24-26-28-30	Atlantic
15-16-18-20-22-23-23½-25-26	California
18-20-22-22½-23-24-26-28-30	Canada
15-17-19-20½-22-23-24-26-28	Colorado
18-19-20-21-22-23-24-25-26	Pacific
17-18-20-21-23-24-26-28-30	Unknown
18-20-22½-24-25-26-28-30-32	Unknown
16-18-20-22-24-26-28-30-32	Unknown
18-20-22½-23½-24-25-26-28-30	Unknown
16-18-19-20-21-22-23-24-26	Unknown

If anyone knows the geographic area where then (unknown) grading ranges were used or if any other grading ranges not shown in Table 2 are known, please contact the author.

A new version of the Acme scale with a flanged front guide for the fins was introduced at the Chicago World's Fair in 1933-34.[5] The numbers were on the flange rather than on the fins like the 1924 version. This version of the Acme was introduced as a new, improved scale (Fig 8). This scale also operated on a weight-lifting system. The fins are raised though slots on the flange on the left side of the scale. Each fin was attached to the scale with a small pin that went through a hole in the narrow end of the fin. Between each fin is a small brass washer to reduce friction. In the two versions of Acme scales, the back view demonstrates the difference in the size of the base of the scale. The flanged scale has the narrower base (Fig 9).

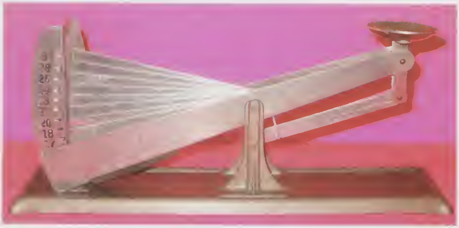


Fig. 8. This version of the Acme was introduced at the Chicago World's Fair in 1933-1934.

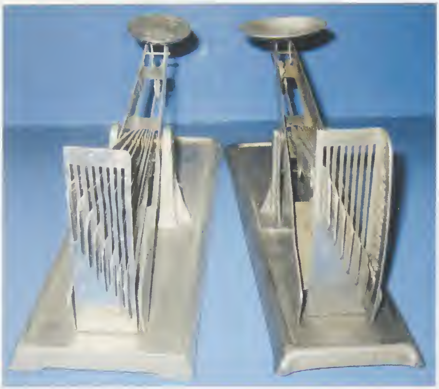


Fig. 9. Shown from the back the Acme with the flange, shown on the right, has a narrower base.

One possible problem that could affect the accuracy of the scale would be friction on the fins as they are raised through the slot. The light weight aluminum construction of the fins and slots in the guide are easily bent, which could also affect accuracy.

Two foreign egg scales similar to the Acme Egg Grading Scale have been found in publications and being offered for sale. It is unknown if these scales were developed independently, copied, or resulted from agreements between the companies.

The Canadian egg scale similar to the Acme egg scale has seven fins. The scale shows the weight per dozen grading range and uses the weight-lifting principle. This scale, labeled DOMINION, is mounted on a flat bone-shaped cast-iron base that is painted green (Fig 10 & 11).

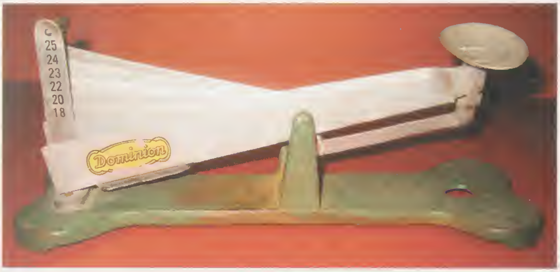


Fig. 10. The Dominion egg Scale from Canada only has 7 fins. It has a cast-iron base.

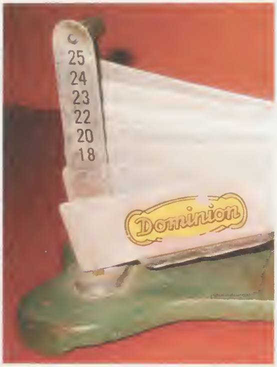


Fig 11 The only identification on the Dominion found to date, is a decal affixed to one fin. It is believed to have been made by Canada Slicer Corp., Ltd. Bowmanville, Ont.

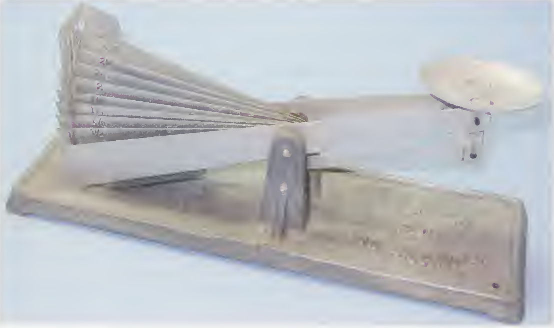


Fig. 12. The earlier Australian Multiplo, much like the early Acme, is all aluminum but unlike the Acme it shows weight per egg rather than weight per dozen.

The second egg scale, similar to the Acme is from Australia and is called the Multiplo Egg Grader (Figs.12 & 14). The scale sold for $1.69 Australian in the 1949 Clarks' Catalog. This scale has the same weight lifting principle as the Acme, with nine fins, but the grading shows the actual weight of

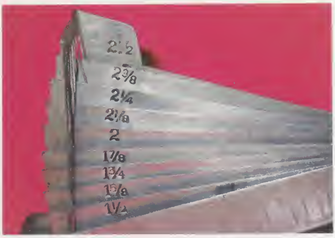
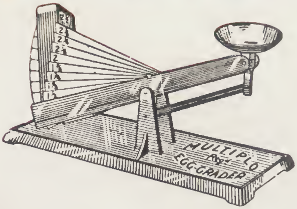


Fig. 13. Fins of the Australian Multiplo show weight in oz per egg.

"MULTIPLO" EGG GRADERS.



Multiplo egg graders are easily the fastest. No weights to shift, accurate, strongly made of aluminium. Price, 16/6 each (postage 9d.).

Fig. 14. This "Multiplo Egg Grader" was advertised in a 1949 Clark's Catalogue of Poultry Feeds and Equipment. It is identical to the original model of the Acme Egg Grader which was manufactured in the US from 1924-1936, except for the graduations of 1½, 1⅝, 1¾, 1⅞, 2, 2⅛, 2¼, 2⅜, and 2½ oz per egg instead of Acme's standard graduations of 19, 20, 21, 22, 23, 24, 26, 28, and 30 oz per dozen.

one egg in ⅛ ounce increments, rather than weight per dozen eggs (Fig 13). Like the Acme, the flange at the end opposite the egg cup, on the later scale, is an improved design to provide a much more rigid frame than the earlier model, although it is shaped differently than the later model Acme. Also, please note that the egg cup on the later model Multiplo is substantially deeper than that on the later model Acme. Multiplo also stayed with the cast aluminum base for their later model. For its later model, the Acme adopted a tin base, which rusted over time.

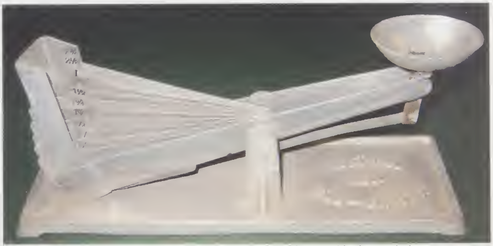


Fig 15 The later Multiplo retained the cast aluminum base and had a much deeper egg cup.

The Acme Egg Grading Scale was selling for $3.00 in 1928 and for $4.49 in 1962, when production may have ended. The following 1928 advertisement is a summary for the Acme scale.[6,7] *Acme Egg Grading Scale Automatic-Accurate-Easily Read Price $3.00 Postpaid. Durably Constructed from aluminum—no springs to get out of adjustment. Indicates grade instantly--no Weights to move. Used by U.S. Government specialists in Establishing standard grades.*

Acknowledgements

I want to thank the following ISASC members: Charley Amsbaugh for the research, review, photos and suggestions he made for the article, Bill Berning for alerting me to various Acme scales, and Clifford Lushbough for sharing the Acme advertising brochure.

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7. Montgomery Wards Catalog, 1962.

Guarding the Nation from Weight Frauds

Army of Inspectors Constantly at Work Checking Standards, Save Public Untold Thousands of Dollars Every Day.

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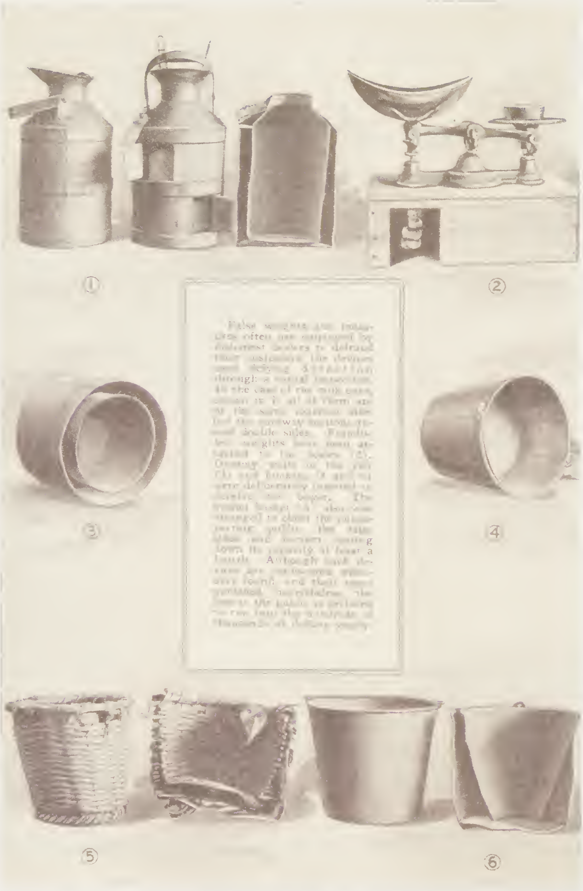
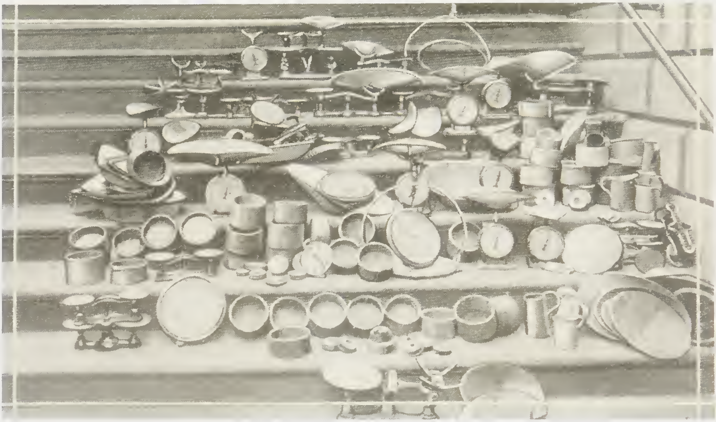


To Protect Buyers from Short Weights and Measures, Such as Are Shown Above, Most Cities Maintain a Force of Inspectors Who Seize and Destroy Fraudulent Devices.



Confiscated Weights and Measures

Untold thousands of dollars are saved the public every day of the year through the activity of city, state, and government officials who check weights and measures to guard against mistakes and deliberate frauds.

By promptly discovering a faulty butter measure before it had been widely used in Chicago, it was estimated that purchasers had profited to the extent of at least $750,000 a year. Detection of a false lard and meat scale was said to have kept approximately $350,000 in the pockets of buyers.

In one city alone, coal bills are cut several hundred thousand dollars a year through the constant checking of weighing devices, according to officials. Every scale of less than three tons capacity is inspected once a year, and stamped with an official seal of approval if it is correct. Those of more than three tons are checked twice a year.

To guard householders against the wiles of unscrupulous dealers who rest too heavy a hand on the meat scales, or resort to other means of giving short weight or small measure, is the task of an army of inspectors throughout the country. Every measuring machine, from a taxi meter to a candy scale, is checked. In many localities, the use of scoops and cups is prohibited and everything must be weighed.

Frequently, it is asserted, the trickiest storekeepers will have the most elaborate and reassuring weighing equipment known, but by clever movements or actual "doctoring" of the balances, they are able to cheat their customers. Dishonest dealers are haled into court, and, if convicted, fines are imposed and their weights confiscated. When a large assortment has collected, the false balances are destroyed.

As civilization advances, the task of insuring correct weights and measures has become harder. Measuring cups of some sort, and balances of design now considered obsolete, were employed ages ago, but the temptation was not so great then as values were not exact and had not been estimated with scientific precision.

In the Bureau of Standards, in Washington, a complete set of weights and measures is kept in sealed cases and under constant guard. These serve as models for the entire country. The weights are kept in air-tight cases to protect them from dust, and at a constant temperature.

Bowman's Pendulum Postals

BY JAN BERNING

The story of Reginald Moore Bowman spans 2 continents, 3 countries and 83 years. He was born in Shincliffe, Co. Durham, England on April 25, 1886, and was listed in England's 1901 Census for Durham County, as a 14 year old living with his parents, Reginald and Eleanor, and elder sister Laura. The younger Reginald emigrated from England to the USA in 1906, aboard the Saxon. The US census of 1910 shows that he had been married to Anna for two years, was living at 1531 Belt Avenue in Baltimore, Maryland and was employed as a Rail Road Fireman.

A listing of Canadian soldiers of WWI, dated January 14, 1918, has the following notation concerning our subject: Attestation Paper, Canadian Overseas Expeditionary Force, 1st Dept Battalion, 1st Central Ontario Regiment.
Reginald Moore Bowman
Born Shincliffe, Durham, England
Next of kin, Mrs. Anna May Bowman, 4229 Powelton Ave., Philadelphia
Date of birth April 25, 1886.
Trade, Locomotive Engineer.

Following the war, a notation about Bowman's return to the USA reads as follows:
Border Crossing, Canada to US (Buffalo)
Date March 11, 1919
Reginald M. Bowman, b. Durham, age 32, Loco. engineer, last permanent residence Toronto, destination Baltimore. Notes: In US 1906-1918. Baltimore passage paid by Army. Seaport Baltimore February 1906, ship Saxon.
Father: Reginald Bowman, Prov. Nat. Bank, Manchester.

In the 1920 US Census records we find: Reyinald [sic] Bowden [sic], in Everett, Washington living at 1502 Walnut St. as a lodger, age 37, widower, emigrated 1905, alien, b. England, as were parents, Locomotive Engineer.

The 1930 US Census notes the following: Baltimore, 1111 Pine Heights Avenue.
Ragnvald [sic] M. Bowman, age 43, b. England as were both parents, RR Engineer, emigrated 1904, married to Bessie B., age 33, born Virginia, father b. Virginia, mother b. Kentucky. One son, Sterling T., age 15, b. Virginia. Real estate $4500. In that same year the New York Passenger Lists for the SS Majestic reads as follows: arrived March 11, 1930 from Southampton. Reginald M. Bowman, age 44. Naturalized May 1925, Baltimore. Residence, 1111 Pine Heights Avenue.

The next listing for Reginald Bowman appears on a WWII Draft Registration Card bearing his signature. It reads as follows: April 25, 1942. Reginald Moore Bowman 1007 Pine Heights Ave., Baltimore, MD. 56 years old, born Durham, England, April 25, 1886. Employer, Baltimore & Ohio Railroad.

While old records are sometimes illegible, it is evident that Reginald Moore Bowman immigrated to the US from England in 1906, and resided in Baltimore, Maryland until 1918. He moved to Toronto and aided the war effort with the Canadian Overseas Expeditionary Force. After the war he returned to Baltimore, became a US citizen by naturalization, lost his wife and moved to Washington for a short time. By 1930 he was again living in Baltimore, had been remarried and had a son.

Bowman's Patents

Reginald Moore Bowman was employed by the Rail Road for much of his life. It is reasonable then, to find that his first patent was for a Locomotive Blower and Stack. US Patent number 1,075,140 was issued on October 7, 1913, while Bowman was still a British subject and living in Baltimore, Maryland. It is also interesting that this patent was applied for and issued while Bowman was employed as a Rail Road Fireman and is a device *for lifting smoke and producing air drafts in order to promote combustion in furnaces of…locomotives.*

It is unclear why Bowman, the Locomotive Engineer, felt the urge to invent a better postal scale but he was issued three different patents for pendulum postal scales with four examples of the latter two patents found to date.

The earliest of Bowman's letter scale patents was issued on December 24, 1946 and designated patent number 2413166 (see Figure 1). It was for a quadrant dial, pendulum scale with a wire letter holder. The dial on the patent drawing for this scale shows two sets of graduations for this patent and the patent states that for heavier weighing the weight [or pendulum] is lowered…by depressing the catch. To date, no scales have been located pertaining strictly to this patent.

Bowman's next patent, number 2508011 (see Figure 2), was issued on May 16, 1950 for a half-roberval Pendulum Scale, and three postal scales adhering to this patent have been found. Each of these will be examined in detail with a final comparison of the differences and likenesses of the scales.

Scale one resides in the Laycock collection. It is constructed of Plexiglas, natural wood and has sheet-steel base-mounted indicators. The quadrant dial is painted on the Plexiglas and is graduated from 0 to 9 ounces by ¼ ounce. The front of the dial (Figure 3) indicates weight and postage for 2nd class mail while the back of the dial (Figure 4) indicates 1st and 3rd class postage. The top of this scale has a paper label (Figure 5) affixed to it which reads *SEE-SAW LETTER SCALE MADE IN BALTIMORE, MD U.S.A. PATENT NO 2.413.166: OTHER PATENTS PENDING SCALE MUST BE LEVEL FOR CORRECT WEIGHT AIR MAIL 5c PER OUNCE OR FRACTION IN U.S.A.*

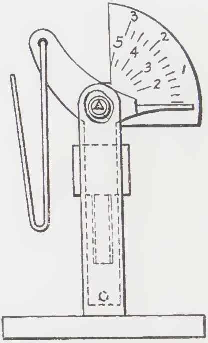


Figure 1. Bowman's first patent was issued for this postal. Does any member have one?

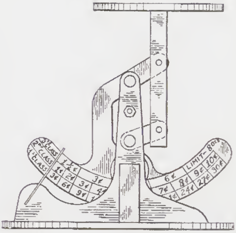
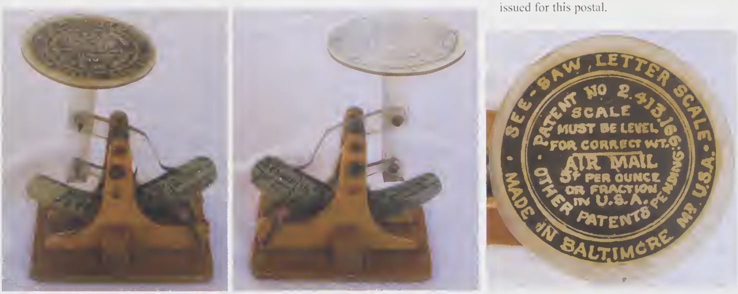


Figure 2. Bowman's second patent was issued for this postal.

Figures 3, 4 & 5. Laycock's scale, shown here, is made from wood and Plexiglas. Front of dial shown to left, back of dial shown right and label on top letter plate shown far right. The top plate of this scale only lists the first postal patent issued to Bowman.



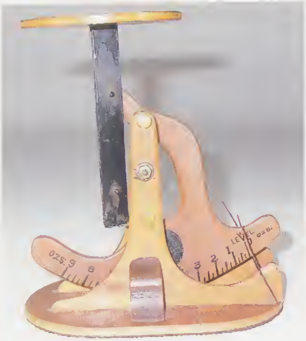
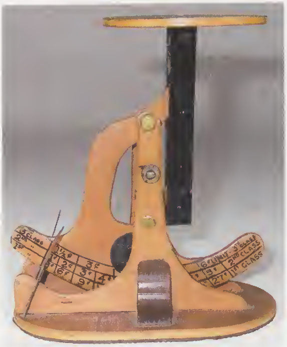


Figure 6. ➘➘ Berning's scale is made of plywood with a sheet-steel letter plate leg and indicators. The front of the dial is graduated from 1 to 9 by quarter ounces.

Figure 7. ➚➚ The back of the dial on this scale lists 1st, 2nd and 3rd class postal rates.



Scale two resides in the Berning collection. It is constructed of plywood, with sheet-steel, base-mounted indicators and letter plate leg. It has an easy-to-locate counterpoise made from lead. The front of its quadrant arc dial is graduated from 0 to 9 ounces by 1/4 ounce while the back of the arc indicates 1st, 2nd, and 3rd class postage rates. The top of this scale has a paper label affixed to it which reads as shown in figure 8. This scale has a piece of ribbed rubber affixed to its base.

Scale three resides in the Jibben collection. It is constructed of painted and natural wood with a sheet-steel, base-mounted indicator and an aluminum letter plate leg. Its dial front is graduated from 0 to 9 ounces by 1/4 ounce and shows 3rd class rates while the dial back shows 1st class and air mail rates. It is the only scale of the three showing Bowman's

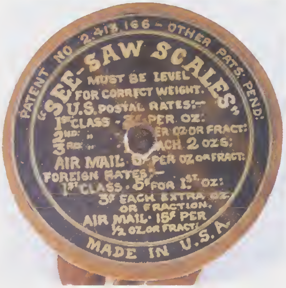


Figure 8. ➚➚ The Laycock and Berning scales both list 5 cent Air Mail rates that were in effect in the US from 1946 to 1949, on their letter plates. This scale is the only one to list Foreign postal rates.

Figure 9 & 10. ➚➚ Jibben's scale differs from the others in the fact that it has a painted wooden body, a thick wooden base, a smaller letter plate and an aluminum plate leg. Its dial list a 6 cent Air Mail rate which was in effect from 1949 to 1955.

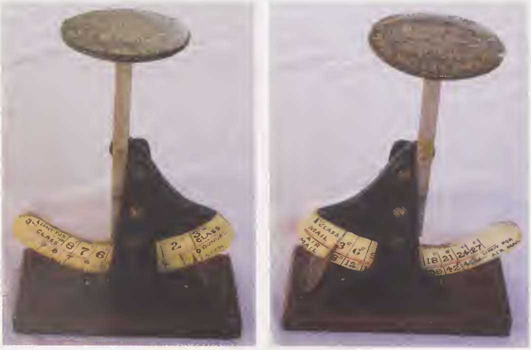
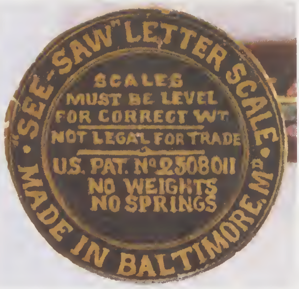


Figure 11. ➚➚ The letter plate of Jibben's scale lists the later patent number 2508011, on its plate. This scale has the smallest letter plate.



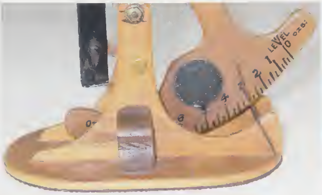
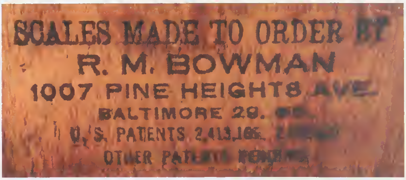


Figure 12. The circular counterpoise is affixed just above the dial and may be clearly seen on the Berning scale, when a load is applied. The counterpoise is not as evident on the other scales as it is painted over with numerals for the dials.

second patent number, 2508011, on its letter plate. The bottom of this scale has been rubber stamped or printed with the following: Scales Made to Order by R.M. Bowman 1007 Pine Heights Ave. Baltimore 28 MD. U.S. Patents 2,413,166. 2,508,011 Other Patents Pending.

The three scales are different sizes and each has a different letter plate label even though each label appears hand-written. The lettering and numerals on all the dials may have been hand done by the same hand. The Laycock and Berning scales are almost identical in their design yet they represent the smallest and largest scales in the group. The Laycock and Berning scales show a 5¢ Air Mail rate per ounce on the letter plate while the Jibben scale indicates a 6¢ Air Mail rate on the dial.

Bowman was issued a third patent for a pendulum scale. It was number 2536154 and was issued on Jan. 2, 1951. While this patent also features a pendulum postal scale with a quadrant dial it differs from our other three examples in several noticeable ways. Instead of a letter plate, it has a letter pan and instead of a base mounted indicator its indicator is attached to the standard. It is interesting to note that the one



SCALES MADE TO ORDER BY
R. M. BOWMAN
1007 PINE HEIGHTS AVE.
BALTIMORE 28. MD.
U.S. PATENTS 2,413,166. 2,508,011
OTHER PATENTS PENDING

Figure 13. This is stamped or printed on the bottom of Jibben's See-Saw scale. It seems to indicate that these scales were made to order, which could explain why only a few examples have been found.

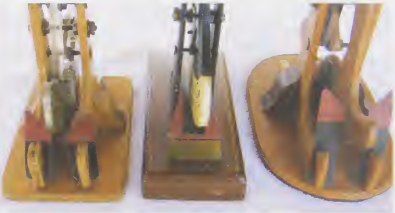
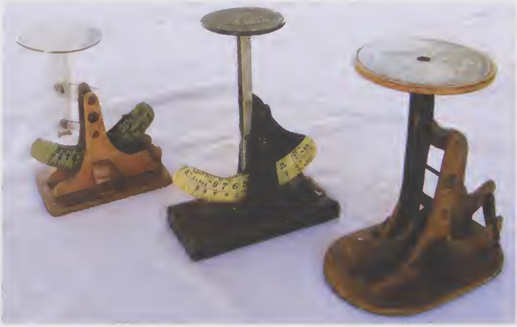


Figure 14. The indicators of the three scales, shown here, are made from painted sheet-steel. The Jibben scale, in the center, has a single piece indicator while the other scales have a two-piece indicator. Only the Berning scale, shown at right has an oval base as is indicated on the original patent drawing.

Figure 15. The three Bowman See-Saw scales shown here are all based on patent number 2508011. This shows that Bowman took liberties with his patent. Note here the differences in such things as base shape and design of the scale body. None of the scales is identical.



example of this scale has no markings on it indicating the maker or patentee. It is made from painted wood with a steel indicator and scale pan bail. The front of the dial on this later patent postal is graduated from 0 to 8 ounces by $^{1}/_{8}$ ounce while the back of the dial is graduated from 0 to 225 grams by $^{1}/_{5}$ gram.

Bowman later received two additional patents, one for a toy horse tricycle and one for a violin bridge. It seems that the inventor of the See-Saw letter scales had several different interests. One would wonder if there are any examples of his first pendulum postal scale in existence. Do you have one? If so please contact the author.

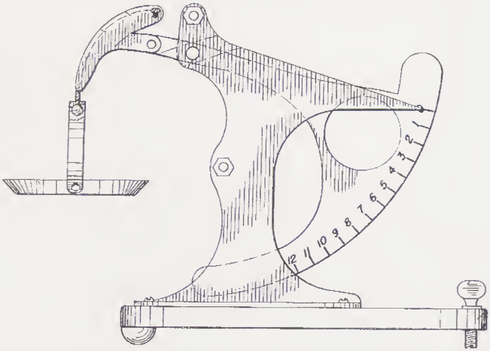


Figure 16. ↑↑ This is the patent drawing for Bowman's third pendulum postal scale. Patent number 2536154 was issued for this scale on January 2, 1951.

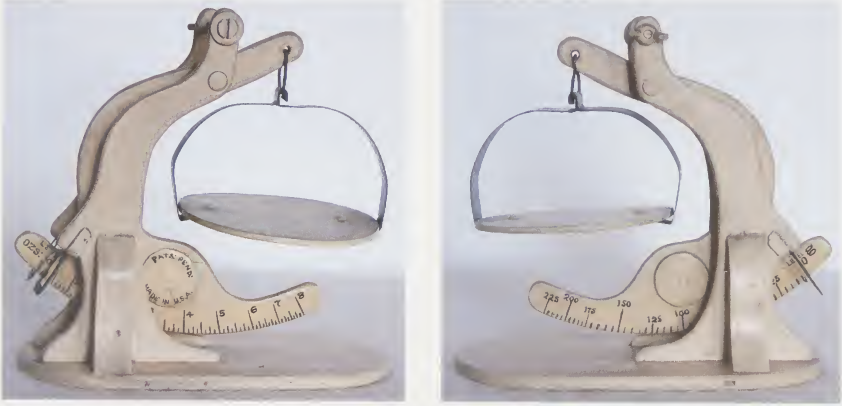


Figure 17 & 18. ↑↑ This is the only known scale based on Bowman's patent 2536154. It is painted in cream enamel with a dark green sheet steel bail for the pan. This scale has an eight ounce or 225 gram capacity. Written on the counter weight is Pats: Pend: Made in U.S.A. The counterpoise on all of Bowman's scales may be seen on both sides of the dial as is evident in these photos. The numerals on this example are hand-written like the numerals on the other examples seen in this article.

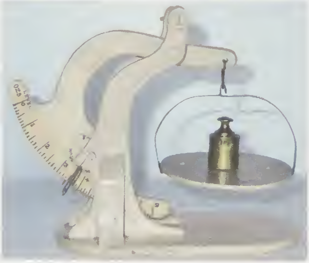


Figure 19. →→ This shows how the scale looks when a load is applied.

Acknowledgements:
The author wishes to thank the following ISASC members: Steve Beare for his research on the life of Reginald Bowman, Bob Jibben, Peter Laycock and Mary Anne Murphy for access to their scales that appear in the illustrations.

John White & Son Postal Balance

BY VERNON DENFORD

This postal balance (Fig 1 & 2) was first seen in a Melbourne shop window in April 2005, however, the shop being closed, I had to be content at this time with just a photograph. After some serious study of the photograph at home, I telephoned the dealer as soon as I knew the shop was open and an offer was made and thankfully accepted.

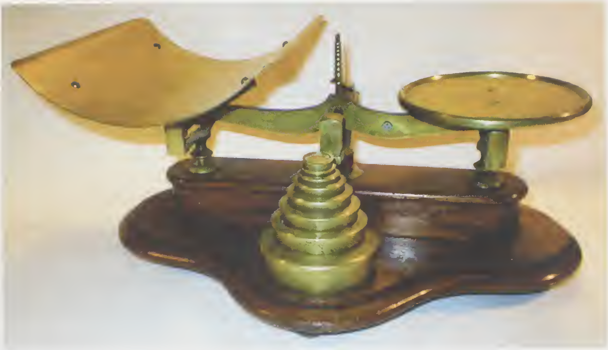


Figure 1

It was with keen anticipation I visited the shop seven days later to claim my prize and drove home the 85 kilometres to the wonderful Yarra Valley of Victoria to closely examine this latest acquisition.

My delight was beyond expectation as the following details were revealed. It is a Single Beam, Enclosed Roberval Balance with a tapered (beehive?) pointer. The balance is made of brass on a polished mahogany, enclosed base with bun feet. The three knife-edges and the enclosed stays are iron.

I am intrigued that the letter/parcel plate is on the left of the beam when traditionally we are accustomed to the reverse principle applying. Should this be so?

The front of the beam has, on the right, a verification lead stamp with
The left side of the front of the beam is marked, TO WEIGH 4 lb.

G♛R
209
15

The reverse of the beam is inscribed J WHITE & SON over AUCHTERMUCHTY. The brass weights are verified:

Top Inscription	Avoir 2 lb	1 lb	8 oz	4 oz	2 oz	1 oz	½ oz
Verification Plug on Base	G♛R 209 15	G♛R 209 16	G♛R 209 15	G♛R 209 15	G♛R 209 15	lead plug not decipherable	--

My first enquiry was to our indefatigable Diana Crawforth-Hitchins who directed me to Mr Edwin White, and it was subsequently confirmed that the balance was made by the family firm of John White and Son of

Auchtermuchty, (Fife, Scotland). Edwin is a member of ISASC(E) and the Managing Director of this family firm, established prior to 1715, and believed to be the oldest family firm to survive in direct family descent.

Edwin kindly provided the information that this balance was not shown in the firm's 1905 catalogue but a very similar item is depicted in the post-WWI Catalogue No 28, from the early 1920s. (Figures 3 & 4).

The post-war balance illustrated, "Handsome All-Brass Postal Balance" No. 122 with the central leg replaced by an A frame but no pointer. It could possibly be a less-expensive model manufactured as a result of war-time shortages.

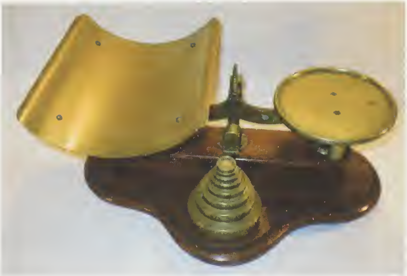


Figure 2.

The catalogue picture does confirm that the left side letter/parcel plate on my example is correct, as designed by the manufacturer.

So my balance was manufactured between 1905 and 1915 and verified for trade use in the County of Fife (G♛R 209) in 1915, with a replacement 1 lb weight verified in 1916.

This is an exceptional example of this traditional scale-maker's trade, it is in especially fine working order, balances perfectly and when loaded, discernibly turns on a 100 milligram weight.

Edwin White is not aware of any other examples of this balance in existence, and his enquiry of the history of the balance in Australia sent me back to the shop dealer for further information. Unfortunately there was no "down under" romance involved, as I was informed that this handsome postal balance was purchased at an auction in Hexham, Northumberland and shipped to Australia in November/December 2004. So it was only 120 miles from home when auctioned!

Acknowledgements:

Special thanks to Diana Crawforth-Hitchins for guidance on matters of scales and weights over many years and to the assistance and information provided by Edwin White on this postal balance.

Figure 3.

Established
previous to
1715

Telegrams: Weigh, Auchtermuchty
Telephone: No 14
Code: A B C, 5th Edition.

Sectional Catalogue No. 28

ILLUSTRATING

PLATFORM and DEADWEIGHT
WEIGHING MACHINES
BEAMSCALES, Etc.

SUITABLE FOR

MANUFACTURERS, WHOLESALERS, Etc.

SECTIONAL LISTS

Counter Scales etc., for Retailers	No 30
Automatic Counter Scales	31
Sack Weighing Machines	32
Coal Weighing Machines	33
Dispensing Chemists' Scales	34

JOHN WHITE & SON

Partners: John White Andrew M. White Edwin R. White

AUCHTERMUCHTY
SCOTLAND

Branch—
EDINBURGH:
28-30 Victoria Street
Phone: Cent 2007

LONDON OFFICE:
82 Victoria Street, S.W.1.
Phone: Victoria 3207

Branch—
GLASGOW
63 Brown Street C.2
Phone: Cent 5772

Probably the only Firm in Great Britain which has been carried on for over 200 years in *Direct Family Descent* (See page 2)

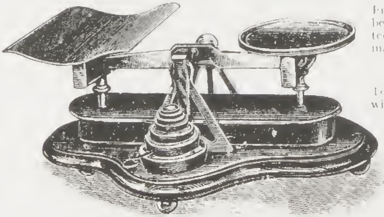
Imperial Counter Machine

No. 120.

Generally similar to above illustration, but of lighter construction.

To weigh	28	56 lbs.
Square brass pan	170/-	200/-
Square iron pan	165/-	195/-
Oblong concave brass or copper pan	176/-	208/-

Handsome All-Brass Postal Balance



Fitted with agate bearings and mounted on polished mahogany base.

No. 122.

To weigh 4 lb., with set of weights.

140/-

If scale and weights nickel-plated,

160/-

Figure 4.

— 4 —

About the author.
Vernon is a retired Public Servant and formerly a spectacle lens maker. Born in Bristol UK, he migrated to Australia in 1969. He is married with four children and has eight grandchildren. He started collecting scales and weights in 1974 and joined ISASC in 1975 following correspondence with Bob Stein and Michael Crawforth. Vernon served for eleven years in local government representing Doncaster-Templestowe (Victoria) as Mayor in 1986/7 and was the Council's representative on the East Central Weights and Measures Union. (This Union was the regulatory body for trading standards for 15 municipal councils). He has an eclectic collection of scales and weights, a lot of ephemera, and books on the subject. He enjoys showing parts of his collection and talking to groups on the history of scales and weights and, for want of a better title, nominates himself as an amateur "Historical Metrologist" (Scales and Weights)

Joel F Keeler: Revisited

SENT BY ROBERT KEELER

Editor's note: The following excerpts are reprinted from the Thirteenth Annual Report of the Ohio State Board of Agriculture, with an Abstract of the Proceedings of the County Agriculture Societies: to the General Assembly of Ohio, for the year 1858. Columbus, Ohio: Richard Nevins, 1859. This information is an addition to the article 'Joel F Keeler, Epitome of US Industry', EQM pages 2703-2709.

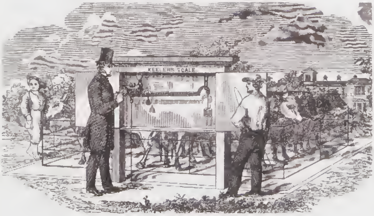
Your committee, to whom was re-committed the examination of the Platform or Hay Scales exhibited by E. & T. Fairbanks and J. F. Keeler, in Second Department, Nos. 21 and 66, are of the opinion, upon a full examination, that Scales entry No. 21, are of the best workmanship, and made in the most substantial and workmanlike manner; and upon a fair trial we find them very correct and accurate, and we think are entitled to the first premium. J. F. Keeler's Scales are a good kind, not as expensive as the Fairbank's Scales, and for all practical purposes, are accurate enough, and we would recommend them to the favorable consideration of the Board for a premium. Mr. Keeler's Scales are of Ohio manufacture, and in the opinion of your committee, are good enough for all common weighing purposes.

N. B. GATES,
N. G. OLDS,
Committee

ELYRIA, May 1, 1859.

This certifies that on the first examination of the Platform Hay Scales exhibited by E. & T. Fairbanks & Co., and by J. F. Keeler, at the State Fair at Sandusky City, September, 1858, the first premium was awarded by the committee to J. F. Keeler's Scale, but after the second examination it was awarded to Fairbank's Scale. The time set for the said second examination was two o'clock P. M. of the last day of the Fair, but the committee being otherwise engaged, did not make said second examination till sometime after three o' clock, and after Mr. Keeler's Scale had been taken down and a part of it removed from the Fair grounds.

N. B. GATES, *Ch'n of Com.*



Keeler's Patent Iron Scale.

Keeler's Patent Iron Scale, Which received the first premium at the last State Fair of our Society. The peculiar features of this Scale consist in its capability of easy and accurate adjustment, freedom from liability to freeze up in winter, quick and easy turning after years of hard usage, in the largeness of its platform, fitting it to weigh a greater number of animals at a draught than usual, and especially for the notice it gives whenever, by any cause, it gets out of a level position; it is said no platform scale can weigh correctly unless standing level.

ADDISON SMITH

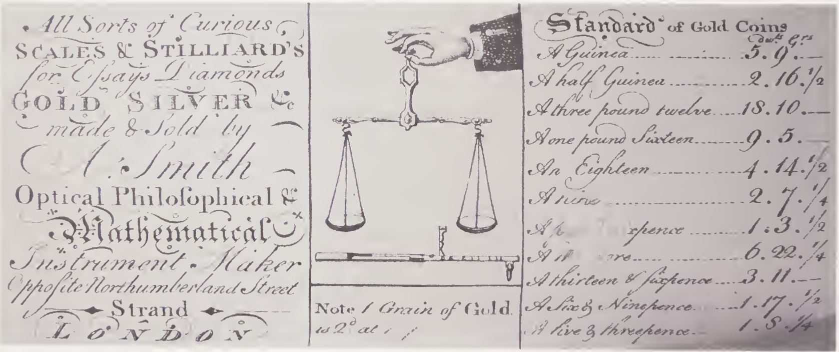
BY BRIAN GEE

The facts, found by Dr. Brian Gee for his forthcoming book on Francis Watkins, the scientific instrument maker, have been arranged and commented on by D Crawforth-Hitchins for ISASC.

Addison Smith was the son of William Smith (born c.1706) and Mary Anderton (born c.1710). He was born in 1732 in Macclesfield, Cheshire, 170 miles from London. He lived for 63 years, from 1732 until 1795, which was a very average life-span (once a child had survived the vicissitudes of childhood).

Aged 16, he went to London where he lived with his uncle, Thomas Anderton, in the village of Chelsea. Thomas Anderton was a vintner in Westminster. Addison Smith, in 1750, aged 18, was apprenticed in Spectaclemakers' Co to Francis Watkins I. (Most apprentices were accepted when they were 14 years old, and were consequently less educated than Addison. This maturity probably gave him an advantage.) Francis Watkins was a highly respected instrument maker (not specifically a spectacle maker) who trained Addison to make complicated instruments of brass and glass, such as telescopes and air pumps, and including hydrostatic balances for scientific experiments. Many instrument makers at that time also made coin scales as part of their stock-in-trade.

Addison trained alongside Henry Pyefinch, three years later in starting his apprenticeship. Addison was late in taking his freedom, after a 13-year apprenticeship, instead of the conventional 7 years. He was 30 years old in Jun 30 1763 when he was admitted to the Freedom of Spectaclemakers' Company, and gained the Freedom of the City of London. This delay was probably due to its not being necessary to be free of a Guild to trade outside the three-mile surroundings of the City of London, and additionally, not needing to be free until he wished to take an apprentice himself.



All Sorts of Curious
SCALES & STILLIARD'S
for Eſsays Diamonds
GOLD SILVER &c
made & Sold by
A. Smith
Optical Philoſophical &
Mathematical
Instrument Maker
Oppoſite Northumberland Street
Strand
LONDON

Note 1 Grain of Gold is 2d at [illegible]

Standard of Gold Coins

	Dwts Grs
A Guinea	5.9.—
A half Guinea	2.16.½
A three pound twelve	18.10.—
A one pound Sixteen	9.5.—
An Eighteen	4.14.½
A nine	2.7.¼
A [illegible] xpence	1:3.½
A [illegible] re	6.22.¼
A thirteen & ſixpence	3.11.—
A Six & Ninepence	1.17.½
A five & threepence	1.8.¼

Figure 1. The trade card of Addison Smith, probably printed for use only in his boxes of scales. This suggests that he made a lot of scales, as he would otherwise have used an alternative trade card that emphasised his making of optical, philosophical and mathematical instruments. Note that he advertised scales for essays [assaying], diamonds, gold and silver, enticing upper-class customers and tradesmen of a superior sort, not shop-keepers or workmen. Photo M A Crawforth

Addison Smith took on his one and only apprentice Francis Watkins II (nephew of his master) in 1763, as soon as legally permitted by the Spectaclemakers' Co. Francis II apparently did not finish his apprenticeship, but the reason is unknown. The same year, Addison opened his first shop, in the Strand, variously called "St Martin's Lane, near Charing Cross", "Opposite Northumberland Street, Strand" and later "481 Strand". See Figure 1. The shop at the south-western end of the Strand was well situated for catching the eye of prosperous clients, being between the smart part of Soho and the Houses of Parliament, and on the main route to the western crossing of the Thames for all Londoners who did not live at the eastern end, near London Bridge.

Addison must have been respected by his master, as they formed a partnership, Watkins & Smith, when Addison was 31 years old, the same year that he married Elizabeth. (Their first daughter, Clarinda Frances, born the next year, was christened at St Martin in the Field, Charing Cross. In 1765 their second daughter, Frances Jane was born, followed by Elizabeth in December 1765. Their fourth daughter Lucy was born in 1767.)

Both Watkins and Smith were deeply involved in a Petition to the King in 1764 while Watkins was the Master of Spectaclemakers' Co. The Spectaclemakers were furious with John and Peter Dollond for restricting their trade by getting a patent for a new arrangement of lenses for telescopes that other spectacle makers had been making for some years previously. They petitioned the King, but failed to get the patent rescinded.

A surviving billhead for Watkins alone has parallel English and French texts each with a decorative border, with a bill written in pencil to the Earl of Winterton, endorsed as a receipt and signed 'Frans Watkins', dated 27 May 1766. Advertising in French and English was less common than previously by the 1760s, although many upper class people requiring instruments were of Huguenot descent. This billhead suggests that the partnership was a financial relationship. No evidence has been found yet for their sharing premises.

It is not known when Addison Smith first started to make coin balances, and little evidence of their manufacture survives. The Welcome Collection [now in the Science Museum] had a shagreen case for a top-quality coin scale, with a trade card for coins minted before 1762, but with the five & threepence (a quarter guinea) added, so the scales must have been made after 1762. The surviving weights were pennyweights and grains, with the coins listed being defined by weight, so no weights for specific coins were necessary.

The trade card shows a picture of a fancy coin scale above, and a rare tubular steelyard for coins below. See Figure 2. Only two examples of this tubular design are known, one in the Museum of the History of Science in Oxford, but it is not signed. The second example is also un-named. The tubular beam is graduated for ten coins (4/6 to 36s., but excluding the £3.12s, which was the coin least commonly handled,) current in Britain before the re-coinage of 1776. The clip and the handle fold out of slots in the beam, making this exceptionally early in the development of coin steelyards. One would like to think that Addison invented this design, but he made no such claim on his trade card.

Commonly the illustration of a Hand & Scales implies that the shop sign was a Hand & Scales. But for an instrument maker to have used such a sign would have been very strange. He would have chosen a sign of a more prestigious instrument - a telescope, a microscope or perhaps a sextant.

An equal-arm coin scale of more ordinary design in a mahogany box was in the collection of George Mallis, late of ISASC, with the name panel cut off. To have four examples of Addison's scale-making work is better than nothing, but more research is needed. Otherwise, only a barometer by him is known. Given that he had a very short working life (17 years as compared with an average working life of about 35-40 years), maybe this paucity is not so strange, but potentially more will be recorded once this article is published.

By 1769 the partners were definitely working separately. Francis Watkins I was trading alone at 5 Charing Cross, and Addison Smith was a mere stone's throw away in the Strand. (This area was swept away for the building of Trafalgar Square, with the National Gallery.) In 1770 Addison moved to "the corner of Lancaster Court and the Strand", which was in the same block as previously, but at the eastern end. In 1773 and 1774 Watkins & Smith were still recorded in Trade Directories as "Opticians, Charing Cross", but directories are notorious for including out-of-date information, so we must be wary of these later entries. However, when the Directories gave new information, it is likely to be more reliable, as with the Lowndes Directory which recorded Smith on his own in 1774. The Poor Rates are totally reliable, as no Rates could be collected from an out-of-date address! In 1780, Addison Smith was last noted at the corner of Lancaster Court in the Poor Rates Book. In 1780 Addison relocated to a shop between Lancaster Court and Hudson's Court, paying £2 4s 8d quarterly rate. So in 17 years, his three shops were all located in the same block, and his customers would have had no trouble finding his shop.

In 1778, Addison was made a Warden of Spectaclemakers' Co with Peter Dollond, during which year he was presented with an engraved case of spectacles. Only two years later, his last attendance at Spectaclemakers' was recorded. In 1781 he bought a house in Charlotte Street, Rathbone Place, right on the very northern edge of London, facing open fields, possibly because of his retirement at about 50 years of age. Several scale-makers and instrument-makers retired to nice new houses on the northern edge of London, where the air was much cleaner. But Addison was peculiar in retiring so young, raising the conjecture that his health was not good.

Addison maintained his interest in the trade, as he applied for a patent on July 7th, 1783, for a new design for spectacle frames. "An optical instrument of one or two sights, made in various formed frames, fitted to the head or nose or to hold in the hand". He described himself in the patent as a gentleman of Richmond, Surrey, which is confusing, as he had a good house in north London! Did he invest in the latter house, but live in Richmond, southwest of London, another salubrious village for people of high social standing? Or did he buy the northern house for his two surviving daughters to live in? By 1787, he was definitely living in the northern house.

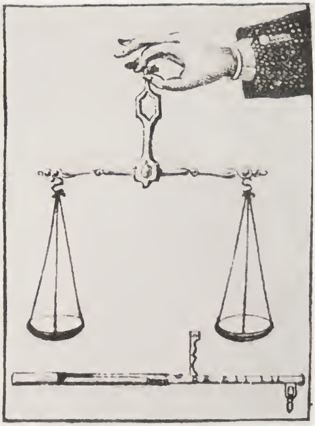


Figure 2. The central panel of Addison Smith's trade card, showing two styles of coin scales, a smart equal-arm scale, such as he would have put into his shagreen cases, and a tubular steelyard of very progressive design.

Photo M A Crawforth

In 1787 Addison Smith received a windfall of £1000 [equivalent to £96,600 today] from the will of George Lucy, but he was not satisfied. He thought he should have received more, and brought a court case against the heirs of George Lucy, (who claimed that Lucy was not sane,) that trickled on for a few years, unsuccessfully. You would think that his windfall would cause him to pay his debts, but no, he still owed £26 17s 1d quarterage fees to the Spectaclemakers' Co in 1789. This relaxed attitude to debt permeated British society at this time, affecting particularly tradesmen who had sold on credit and waited sometimes many years for the bills to be paid.

Addison was still interested in the problem created by the Dollond's patent telescopes, and wrote to Jesse Ramsden in 1789 about the prelude to the dispute.1 This suggests that although he had retired, there was nothing wrong with his brain. But six years later, in 1795, when he was 63, he died in the parish of St Pancras, in the City of London, leaving only two daughters and far too few examples of his work!

Notes & References

1. This dispute is the central subject of the forthcoming book by Dr. Gee, so we do not wish to pre-empt the subject here.
2. References are extensive. Please refer to the author for details.

Acknowledgments

With thanks to Dr Anita McConnell, Dr. Peta Buchanan, Dr. Gloria Clifton and Diana Crawforth for their input into this subject.

Author's Biography

Dr Brian Gee was a tutor for the Open University and a senior lecturer in physics at the College of St Mark & St John. He was editor of journals on physics, and has published widely on the subject. He has a special interest in the influence of individual scientific instrument makers on the progress of science. His forthcoming book is a fascinating insight into the battles and conversely, the collaboration between London makers in the mid-eighteenth century.

Half-Roberval Letter Scale

BY MICHAEL ROBINSON

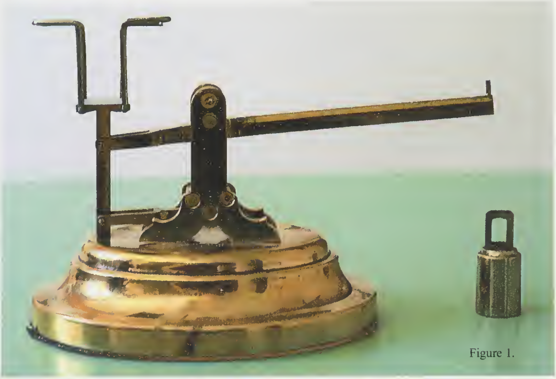


Figure 1.

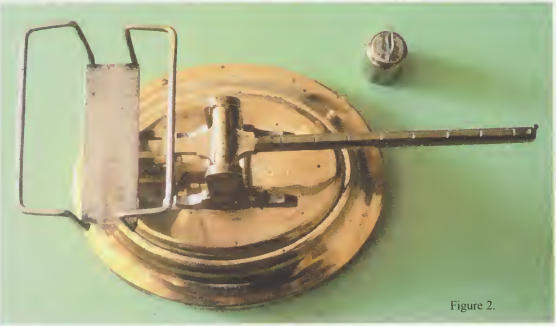


Figure 2.

There is no maker's name on this unusual letter scale. The high quality 'A' frames might indicate MARION as a possible maker, but the beam, graduated in $^{1}/_{2}$ ounces up to 4 ounces, is of lesser quality. There is no read-off for Pence on the other side of the beam. The letter rack and counterpoise are plated (Figure1).

What is the design purpose of the strange letter rack? Perhaps to place small packets on top and letters in the holder (Figure 2)?

Any input from members would be most welcome.

The stepped oval base is hollow with a sheet of thin wood placed just inside the bottom of the base to which has been glued a piece of stiff card covered in velour. The base measures $4^{1}/_{8}$" by $5^{1}/_{4}$"(Figure 3 & 4).

Acknowledgements

My thanks to Gordon Meeks for this contribution to EQM.

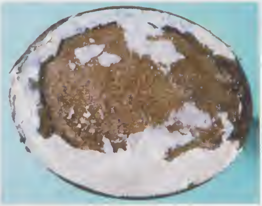


Figure 3. ◄◄ This shows the wood insert in the base.

Figure 4. ►► This shows the velour covered card affixed to the wooden insert shown in figure 3.

Number 113 February 2008

ISASC

INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

A Balanced View

Happy New Year!! We hope that you are all well and that your scale collections continue to grow and provide you with many hours of pleasure. We are embarking on another exciting year for ISASC. The annual convention in Chattanooga in May and the trip to the UK in October, to visit our European colleagues, will keep us busy.

Election of Officers to the Board of Directors

Included in the mailing of your EQM last November was a ballot for five seats on the Board of Directors, for President, Secretary and three Vice Presidents. The ballots are in and the results are now known. Mary Anne Murphy and Kurt Beyreis have been reelected Vice Presidents, their term begins January 1, 2008. Both will serve for two and one half years through May 31, 2010. Carol Hayden has been reelected as Secretary, Jerry Katz has been reelected as Vice President and Peter Laycock has been reelected as President, their terms begin June 1, 2008. All three will serve for three years through May 31, 2011. I am pleased to announce that the conversion of the election date for officers of ISASC is now complete.

Chattanooga Convention May 15, 2008

By now you will have received the registration packet for the 2008 Chattanooga convention. As usual, plans are in place for another outstanding convention. Most of the familiar convention activities; guest speakers, presentations, show and tell, silent auction, lets make a deal will be back. The Thursday night dinner, Friday evening album sharing, the Saturday banquet and the Sunday annual general meeting are all scheduled. A post convention tour to Nashville to see the Willie Edens collection is also planned for the Monday after the convention. Convention Chairman Phil Wehman is particularly excited about the presentations. Included on the program are member Brooke Paige as Thaddeus Fairbanks and our European ISASC colleague Brian Brass. I encourage you to register early.

The George Anna Wehman Collection

While at the Chattanooga convention you will have an opportunity to view an outstanding collection put together by George Anna and Phil Wehman. The collection was started by George Anna in the nineteen seventies. The collection was sparked by a little brass spring scale. Like many of us she liked the luster of a well polished piece of brass. Thirty some odd years later the collection has grown to well over 1000 scales of every make, design and use. The Wehman house is a virtual museum and probably hosts one of the finest and largest scale collections on the east coast.

The Wehmans discovered ISASC in 1986, and until that time they were unaware that others shared the same passion for scale collecting. Phil tells us that for them ISASC "changed the world." They made so many new friends and enjoyed the camaraderie of many of the ISASC conventions. Sadly, George Anna passed away in 2005 after a lengthy fight with cancer. Throughout her long fight she continued to collect scales and kept up her relationship with her many ISASC friends, “ISASC and scale collecting made life bearable.” Phil is quick to advise this is still George Anna’s collection as he states, “She has just left me in charge.” Phil is pleased and honored that he will have an opportunity to share George Anna’s collection with other members of ISASC during the Chattanooga convention.

The Irving Isicoff Safe Collection

On our trip to Florida last month Dian and I dropped in to visit Irving and Rhoda Isicoff at their home in Ocala Florida. Irving had often talked about his collection of antique safes and he was kind enough to give us a viewing. Wow!! You have never seen so many beautiful old safes. There are probably 200 or so stored in Irving’s warehouse waiting for him to build his dream museum. This is the largest collection of antique safes in the world. This is a must see for any scale collector. I know that Irving would be delighted to give you a showing the next time you are in the Ocala area.

Trip to the United Kingdom October 2008

I am pleased to report that approximately 25 of you have signed up for the trip to the UK next October. It promises to be an interesting trip packed with many scale collecting activities. Included is a trip to: the Avery Scale Museum in Birmingham, the Newark Fall Antique Fair, the Crawforth-Hitchins Collection at Oxford, the Scarratt’s Collections at the Lindridge Hall Farm, the Wintour Scale and Weight Museum at Chepstow and the Fall meeting of ISASC Europe at Kegworth. The tour begins in Kegworth on October 8 and runs through to October 17. For any of you who have not yet signed up and have an interest in joining your colleagues please contact me by email at [illegible] .

Website Update

Carol Hayden our website editor reports the following updates.

- In Members Only we have updated both the EQM Index and the EQM Table of Contents. To access them go to the Members Only Section, the pass word is 'pendulum'. Click on EQM Index or EQM Table of Contents and then click on the links at the bottom. Both are completely up to date including the first issue of EQM for 2008. If you have difficulty opening the Members Only Section the security level on your computer may be too high. To fix it call Carol and she will be happy to take you through the process to reduce the security level.
- Under Annual Convention an invitation letter, program and registration form have been added. To access them go to Annual Conventions, Chattanooga Convention and click on 'Invitational Letter' or 'Registration Forms'

Welcome To New Members

I would like to take this opportunity to welcome the following new members and to encourage them to contact any of the members of ISASC should they have any questions. Hopefully we will get a chance to meet them personally at the annual convention or regional get-togethers.

Peter Sticpewich, Chatsworth, NSW, Australia
Fred Huhman, Jefferson City, MO (Jacquie)
George Korach, Lackawanna, NY
Donald Low, Mercer Island, WA (Diana)
Gerald Sloat, Boulder, CO (Gail)
Oded Eliashar, Jerusalem, Israel

In Memoriam

Sadly I report the passing of ISASC member Stan Hanssen who passed away Dec 30 after a short illness. He was 85. His wife Jeanne said "Stan truly enjoyed his association with ISASC and wished he had discovered our group sooner, we had both looked forward to joining everyone in Chattanooga TN."

Articles for Sale and Articles Wanted

Dale Goldman reports: I have a very extensive ephemera collection relating to scale companies...catalogs, trade cards, bills of sale, envelopes, adverts, etc. we have approx. 100 different items relating to Fairbanks Scale Company that I would like to sell. Dale can be reached at [redacted] or by telephone at 858-560-4370

Some samples of the Goldman ephemera collection.

Bob Jibben reports: I recently bought a ribbon (a thin strip of metal that connects the needle to the lever that shows the weight of an item for a Toledo 605AV grain scale). The scale is the same as a 2 lb candy scale. I had to buy two so would sell one for about half the price, as they only sell sets of two. Contact Bob Jibben at 612-925-1386 or email [redacted]

James & Mary Cannon: Have 25 to 30 scales that they would like to sell. Most are large commercial platform scales. If anyone is interested I have a list of items they would like to sell and I would be happy to email it. If you wish to call Mary directly the number is 937-898-2573 or her son can be reached at 937-623-9888

If there are any other members who wish to take advantage of this service please submit your requests prior to the next newsletter. I can be reached at [redacted]

Another Piece of Otherwise Useless Information

111,111,111 x 111,111,111 = 12,345,678,987,654,321

Scale Auction

ISASC member Norm Sturgess has recently sold many of his scales and weights on eBay through J. M. Scarlett. Many of you will have seen these scales as they came up for auction over the past few months. Scarlett put on flights of 50 to 80 items over two to three week intervals. They have sold over 400 items and Norm is very happy with the results. Should you want to contact Mike Scarlett his email address is [redacted]

eBay Scale Auction

The Bernings will be selling part of a large scale collection on eBay. This will include kitchen scales, egg scales, grain scales, computing scales, cream test scales, postal scales, grain test and inspection equipment, weights, pans, etc. This is part of a scale collection assembled by a member of ISASC who collected scales for more than 35 years and has been a member of ISASC for over 20 years. Any of these scales can also be delivered to the ISASC convention in Chattanooga in May. To see these scales go to eBay seller, I-weigh-U.

Hope to see you all in Chattanooga. Until then keep on scaling!!

Peter Laycock, President
ISASC

ISASC
INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

Bob Stein Founder ISASC February 16, 2008

On behalf of the board of the International Society of Antique Scale Collectors, I am saddened to advise you of the death of Bob Stein, one of the Society's cofounders.

He will be sorely missed by avid scale collectors all over the world. He and his wife Margie, over a span of thirty years, have touched the lives of so many of us. His winning smile, warm personality and his never ending passion for scale collecting have left us all richer.

Together with Michael Crawforth, of Oxford, England, he founded ISASC in 1976. They assembled a meeting of some thirty other scale collectors whom they had met from both the United Kingdom and the USA. Together that original group formed ISASC.

Bob served as the Society's first President, a position which he held for over twenty years. He worked tirelessly as it blossomed into a world class organization.

Along with Michael, he developed *Equilibrium*, a quarterly journal dedicated to scales, weights and other metrological concerns. *Equilibrium* was first published in the spring of 1978, and now thirty years later is the world's foremost repository of literature on scales with over three thousand pages of text.

Bob was also instrumental in initiating the annual ISASC convention which is always well attended by enthusiastic scale collectors. This year in May ISASC will hold its thirtieth convention in Chattanooga.

Our Society could not have survived without the passion and dedication that Bob demonstrated as our President. He will surely be missed. Our thoughts go out to Margie, his children, grandchildren and to his brother Ted.

I am sure you all join me in wishing our old friend Bob an "Eternal Equilibrium".

Peter Laycock, President

ISASC

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2008 ISSUE NO. 2 PAGES 3349 - 3376

Cover Picture

Bob & Margie Stein enjoying the sights of Seattle during the 2000 ISASC convention. Bob, cofounder of The International Society of Antique Scale Collectors and President of ISASC for its first 25 years, passed away earlier this year. We are indebted to Bob for his leadership of and passion for ISASC. He will be missed. Thanks Bob for all you have done.

To read more tributes go to Remembering Bob Stein pages 3351 - 3353 in this issue of EQM.

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Article submissions are preferred in MS Word with Times New Roman Font size 12. Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

Remembering Bob Stein

Sadly ISASC co-founder Bob Stein passed away on February 15, 2008. Bob's warm friendly smile and his passion for ISASC will be sorely missed. Bob served as ISASC President for its first twenty five years and was tireless in the development of a world class Society dedicated to the study and collection of scales and other metrology materials. Among his accomplishments none was more important than the development, with the assistance of Michael Crawforth, of our society's quarterly publication Equilibrium. Your society could not have developed to its current state without Bob's stewardship.

Many of our members were there at the beginning of our society and watched it grow under Bob's leadership. We asked them for any input, including but not limited to stories, anecdotes or memories that they thought appropriate for inclusion in this tribute to Bob. Their comments follow.

Linda Loewenstein (Bob's Daughter) Do you know why my parents bought the first scale? Here's the story: When I was two years old, in 1953, my parents moved into their home at 1439 Fargo in Chicago. That year, they purchased their first piece of good furniture - a desk for the living room. At the time, although neither of my parents smoked, it was customary to put out an ashtray for guests who did smoke. My mother was worried that the ashtray would scratch the surface of the desk, so she carefully glued a piece of felt to the bottom of the ashtray.

Unfortunately (or perhaps fortunately), the desk was in the sun. The warm glue seeped out and marred the surface of the desk. Panicking, my mother flew to the nearest antique shop, in search of something, anything, that would cover the blemish. Alas, the first letter scale. Unfortunately, I don't know which of the many scales was the very first!

Diana Crawforth-Hitchins When Michael and I first met Bob, we were greatly in awe of him. He had been collecting for many years, and already had a beautiful collection of postal scales. He came bouncing into our house and, not being accustomed to meeting other collectors, he immediately demanded to know how much we wanted for the various postal scales that he was unfamiliar with. He was furious when told that they were not for sale. He shouted at Michael, and Michael shouting back, (this from a man who never raised his voice!) After two days, Bob stopped asking, and only asked twice on his next visit. He learned!!

Over the years Bob and Margie spent a lot of time with us, giving us enormous pleasure, and widening our horizons. They invited us to Lampton Castle, where they were staying, for a mediaeval banquet, and frightened Michael by arranging for him to be King of the event. They thought it hilarious that he had to wear a crown and red cloak, and give a speech to his assembled subjects.

Whenever Bob arrived after a few days in London, he unwrapped all his latest acquisitions for us to enjoy. We could never understand how he found ten or twenty scales of extreme rarity in, say, four days. He found silver, tortoiseshell, buhl, enamelled, in frilly, fancy designs. He had amazing ability and stamina, and must have denuded London of postal scales for months.

Bob never did master the terminology for scales, but he knew a rarity when he saw one. He never was sure which of his scales were by Mordan, but he knew every nuance of Tiffany's production. Those were his pride and joy, and quite right too, he should admire American production most.

Bill Doniger My first contact with Bob Stein was in 1976. My wife and I were visiting London, looking for scales. Several dealers mentioned that there was an American from Chicago who was buying postal Scales at a feverish pace. I must admit I wasn't far behind on acquisition of same.

Shortly afterwards we were again in London and found ourselves at Portobello Market on a beautiful Saturday morning. There was an English dealer who sold scales and scale collectors gathered there. There we met what was to be the nucleus of the soon-to-be Society: Bob & Margie Stein, Michael & Diana Crawforth, Brian & Janice Brass, Mort & Frances Wormser. Subsequently, another 20 or 50 interested collectors joined. We were off and running with the first convention in 1979 which set the format for future get-togethers. It was held in San Francisco which I hosted.

Under Bob and Michael's leadership (the dynamic duo) membership grew. We were all learning and with the addition of EQM, the society was on a professional level. EQM became the glue that held the society together.

Bob had the background and drive needed to propel the Society forward for the next 30 years. Having been on the Board for many years I got to know him and while not always agreeing with him, I appreciated his efforts and point of view. I would kid him on a number of occasions and say that there were collectors who acquired other than postal scales.

I owe Bob a debt of gratitude for his friendship and for making our hobby one of a lifetime of joy. Also, for the social interaction with the members who I call close friends. We will all miss him.

Ruth Willard Becoming a collector of anything - especially anything that required dusting - was the farthest thing from my mind as a young person. However, I have always been intrigued by the sculptural quality of both scales and weights and eventually acquired a few for decorative accents. It wasn't long until we had more scales than display space, so we remodeled our attic to accommodate them.

About this time we and other collectors we knew received an invitation from Bob Stein to join ISASC - the association he was co-founding with Michael and Diana Crawforth of England. What fun! Beginning in January 1977, each member was expected to take his turn sending a letter about any aspect of scale collecting to every other member. I had the honor of writing newsletter number four. In the spring of 1978, these letters were replaced by EQM edited by Michael Crawforth. Next came our first international convention, held in San Francisco in April, 1979. Here we saw Bob's skill for getting a group of people to combine their talents for the common good. Joel Malter arranged for our group to share the hotel facilities with the Numismatics Association. Dick and Jackie Wagers, Bill and Mary Ellen Doniger, and perhaps others, contributed funds. Will and I met Michael and Diana's plane in Oakland at 4:30 a.m. and hosted them for several days before the convention, as did the Donigers. Six members (Michael and Diana Crawforth, Bob Roberts, Joel Malter, Norman Sturgis and Bill Doniger) provided an all- day educational symposium. The Saturday banquet was held at the aptly named Assay Office Restaurant on Gold St. Sunday's activities included trading and get acquainted sessions along with a lively auction by Joel Malter.

Jan Macho I first met Bob about 6 months after I joined ISASC. I visited him in his office while on a business trip. Bob had this amazing ability to engage people and to get them involved in ISASC. Here I had just joined and he convinced me to become the treasurer and to organize the Anaheim convention. I worked closely with Bob for over ten years and learned from him. ISASC was one of his passions and we all owe Bob a big thank you for being our leader for so many years.

Jaap Visser Always charming, always friendly and helpful. I have met Bob (and his wife) on several occasions: Sindelfingen (Germany) - Paris (France) - Den Haag (Netherlands) - London (England) and of course many times in the States. Although Ronny and I had a lovely dinner in the States with Bob and Margie (we flew in that day and he did not realise that we were more than 24 hours awake!) - my best thoughts are with Bob in London when we were hunting scales. I see him walking in a light raincoat - hands in the pockets - in the middle of Portobello Road. He looked very relaxed and was not in a nervous hurry. He smiled and had pleasure. The dealers knew him. He bought the best scales - even if the price was a bit high. Seeing him walking there - as if he owned the place - is my best memory.

Eric P. Newman Bob Stein was nice enough to help arrange for me to visit Michael and Diana Crawforth in Newcastle, UK many years ago and this stimulated me to study American counterfeit coin detectors. When I finally completed a book on the subject with A. George Mallis, it was Bob Stein who helped me improve a portion of it. That was the kind of thoughtful cooperation which makes one respect others.

Jerry Katz I became a member of ISASC in early 1980. Not a lot of years after, Tod Carley an older and longer tenured member passed away. Todd was handling the public liaison matters which mainly included response to the general public about scales they owned. This service, not yet named the Research and Reply service, was being conducted FREE to the public. Bob asked if I would take over Tod's role. I never did find out why I was asked, but agreed. My early observation in the job was, "Why is ISASC doing this for free?" I convinced Bob that most serious collectible clubs or societies do in fact charge. Bob agreed to a $5 charge. We designed return postcards, used after an inquiry was received, to advise people what the service consisted of and the fee. The fee eventually became $10, and 20 years later I still have the job.

Bob would call me several times a week about the inquiries coming into his office. He always found time to shoot the bull, about my family, and how the antique business was doing. Not long after taking over that job I was nominated for a V.P. position which I continue to fill. I soon got a real flavor of mixing it up with Bob. Board meetings could get hot and heavy at times, but when Bob lost an argument, he did surrender like gentleman. When the Colker scale collection donation, (the first for ISASC), became a reality, Bob trusted me to handle all the matters (except legal). After Bob stepped down as President, he still called me fairly regularly just to say hello, as it were. The last couple of years those phone calls stopped coming, and I missed getting them. Bob was fair and he was hard and I could work with that. I miss him.

Jan Berning I met Bob Stein on April 30, 1983 at the ISASC convention in Sindelfingen, Germany and again at both the Washington, DC and Philadelphia conventions. I arrived a little late to his house on Fargo Street, in Chicago, on May 2, 1991 for the start of the Chicago Convention but he warmly greeted me at the door. Almost immediately he introduced me with "Jan, this is Bill Berning, our newest member." I never did see the scales that night! On November 2, 1991, Bob and Margie were guests at our wedding (see photo above) and the rest, as they say, is history.

Over the years we visited many times in the Stein home as well as at conventions and we consider them among our dear friends. Bob introduced me to my soul-mate and for that I owe him a huge debt of gratitude.

Norm Cima President for Life: Bob Stein was a tall, erect natural leader whose vision directed the founding of the International Society of Antique Scale Collectors. I was introduced to ISASC by Judge Russell Stevens who organized and ran the court system of the Ryuku Island chain including Okinawa after WW II. He was a past member of ISASC because, as a military judge, he felt his status incongruent with that of the ISASC President who spent the war playing Ping Pong, as an enlisted man, in all of the world's war theatres. Judge Russell was sure I could work successfully with Bob Stein and I did, enjoying every moment.

Bob was perfect in finding great old hotels just completing refurbishing at convention time and always in interesting cities, that he selected, containing strong ISASC members to execute the task in Bob's unique fashion. I know because he selected San Francisco twice during my membership. I learned to "French Fold" membership letters and insert them correctly in envelopes. Bob was aided in this task because his business was helping hotels introduce themselves to the public when they came on line. He also was expert at negotiating amazingly low hotel rates and expanding them beyond the convention days.

I joined ISASC the year that Michael Crawforth died. Were it not for Diana carrying his load, the organization would have foundered. Bob recognized this problem and searched for recruits to replace him should he suffer Michael's fate, but at each election there was only one adequate candidate. Bob recognized he was becoming "President for Life" but was sincerely seeking a way out. He was aging and closed his business, but kept his "Inside the Loop" Chicago office so ISASC would continue to have a home.

Bob invited the 1999 ISASC Board to hold ISASC's non-convention, board meeting in his Chicago office. The subject was to consider the means necessary to continue ISASC beyond Bob's lifetime. (See Photo Right) The Board felt with modern communications it would be possible to disperse ISASC from its central control and that Bob could continue to guide and educate others in making ISASC successful. We found and elected Tom Dooley, who, as a career, wrote California's laws for both the Republicans and the Democrats. He traveled to England every year to re-supply his wife's antique shop and already knew the British ISASC hierarchy. Following a founding president is an impossible task but Tom did a magnificent job.

Bob did retire from ISASC. He did re-circulate his extensive collection, making many members of the organization he founded very happy. Following the path of Mark Twain's vision of heaven, I'm sure there is a new tall, erect natural born leader, organizing a society to maintain heaven's weighing activities. Thanks Bob for being a part of our lives.

Steve Berry, Norm Cima Ed Konwitz Jerry Wilson Jerry Katz Bob Stein

Spring Song

BY JOHN KNIGHTS

Give or take the odd Leonardo experimental pendulum, the spring represents the earliest device employed to produce a self-indicating scale.

The earliest attempts used simple flexure springs, as in the Mancur or Quadrant type of device, but round about 1770, Richard Salter began to produce scales using the helical spring, which is still being used for the same purpose today.

The flexure spring offers a small range of movement, which only permits a somewhat limited and imprecise weighing range. This can be enhanced considerably once the helical spring is employed.

Technically a helical spring is a torsion bar; that is a steel bar that twists about its longitudinal axis when force is applied. Such a bar could, in theory be used in its straight form as a resistant but would be too long to be accommodated in a practical weighing machine. By forming it into a helix, however, it behaves as a tensile or compressive component that can be readily incorporated into a working device. A helical spring can operate in either compressive (being squashed by the load) or tensible (being stretched) mode and both methods have been tried at various times.

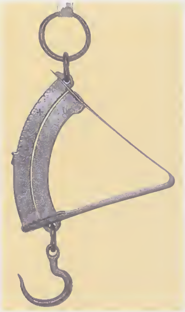


Fig. 1. ↗↗ Flexure springs like the ones incorprated in French quadrant and V spring scales, were first drawn by Diderot for his *Encyclopaedie* of 1755. The same design was still being made at least 60 years later. The capacity of V springs was small. 5 kilos was normal (once kilos were adopted as the unit of measurement.)

The earliest spring balances had the spring confined in a tube with the force being applied at its top, so that it compressed under load. These early balances were high capacity and approximate weighers, using very stiff springs that compressed comparatively little, thus giving weight indication of low discrimination. If the same principle is adopted with longer, more sensitive springs, problems can arise.

If a compressive spring is required to deform over too long a distance there can be problems with the helix buckling or the coils touching, resulting in inaccuracy. These problems do not occur when the spring is stretched when the load is applied, and this soon became the preferred method of employing helical springs in weighing machines. Even so-called pedestal scales; ones with a load pan mounted above the scale, used springs in tension rather than compression.

A long spring, when stretched, does however, tend to 'unwind', causing any pointer attached to it, to shift laterally. This can cause problems of binding if the indicator is confined in a slot as in a simple tubular scale. The unwinding is countered by having the coils of a long spring reversed half way along its length and this was routinely done in tubular spring balances.

Springs have not always been seen as a satisfactory device for accurate weighing. Indeed the claim 'No Springs' was long used by Messrs Toledo as an accolade of excellence, suggesting that their pendulum resistance was a far superior mechanism. Springs were indeed not regarded as an acceptable resistant in self-indicating scales, other than spring balances, until the 1960s, when the technology of spring manufacture finally improved to a satisfactory level. We then saw rather boring spring headworks in shop scales and weighbridges instead of the erstwhile glorious double pendulum mechanisms with rolling fulcra dancing up and down on bands of flexible steel.

In the UK the Salter Company of West Bromwich had a virtual monopoly on spring scales deemed to be of sufficient quality to be in trade use. Other makes were found in domestic and other non-

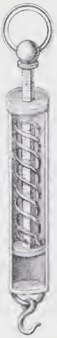
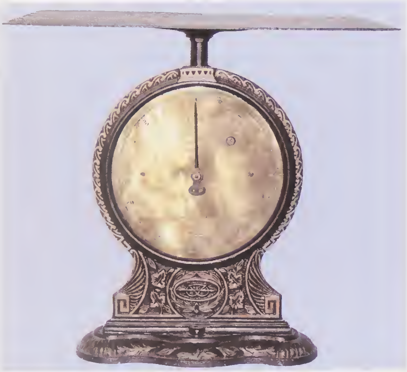


Fig. 2. ↖↖ Leupold shows this illustration in *Theatrum Staticum* of 1726, a compression spring balance for weighing sacks. Salter is said to have started making "pocket steelyards" using compression helical springs in the 1760s in the UK.

Fig. 3. Vertical spring displacement was amplified by use of a rack and pinion in this model 58 T dial scale by Salter. This parcel balance has a 100 pound capacity and measures 18" high.



trade applications but Salter reigned supreme in trade, up until electronic systems supplanted mechanical resistants. Even they had difficulty getting Spring Balances accepted. In the UK, prior to the approval of machines under the Model Regulations, there were examples of tradesmen being prosecuted for using Spring Balances instead of 'proper scales' in the 1880s.

This was probably because they were using the tubular type of balance, which had an extremely poor level of resolution. Some machines that, eventually, succeeded in being stamped under the Model Regulations of 1890, were laughable as devices for trade weighing. A tubular balance with a 30 lb capacity could have a total scale length of only 2 $^5/_8$ ins (6$^1/_2$ cm) and 8 oz divisions a bare $^1/_{20}$ ins (1 mm) apart. It is little wonder that they were held in low esteem.

The vertical displacement of the spring could be amplified by means of a rack and pinion. This allowed weight values to be displayed on a circular dial with the prospect of a much improved level of resolution. Salter produced such a device as long ago as 1820 but the simple tubular device, with its advantages of portability and cheapness, remained popular up until the prescription of all weighing machines under the Weights and Measures Act of 1904.

Rules for the construction of spring balances acceptable for trade use in the UK, were set out in 1907. These prescribed both minimum distances between graduations and minimum weight values for those graduations, thus doing away with ridiculously insensitive balances. Simple tubular scales could no longer meet these requirements and all trade spring balances thereafter had to have circular dials and pointers. There was clearly still official distrust of springs because the rules allowed for machines to be tested for their ability to recover from prolonged maximum loading. This test was even repeated in the Regulations of 1964, indicating that inherent prejudices are hard to shake off.

In the interim, Salter did their very best to persuade relevant legislators of the merits of their balances, even if the class of equipment was not held in high esteem. They had a degree of success and managed to convince certain Governments that their balances could be used for trade, when other makes could not.

It is hard to imagine another type of machine that could have been as useful as the Salter Spring Balance as a 'Maid of all Work' in so many areas of trade in so many countries. The 60T model in particular was widely used, because it combined portability and ruggedness with acceptable accuracy and discrimination.

I remember these machines in use on Grimsby Fish Docks in the 1970s where they managed to remain reasonably accurate despite appalling abuse by the owner, including a daily sluicing with seawater to remove the fish debris. The merchants all got a bit of a shock when the 60T was superseded by a 'posher' model with an internal damper and a glass front. This delicate device was ideal for the cosy retail premises but was a disaster on the fish pontoon.

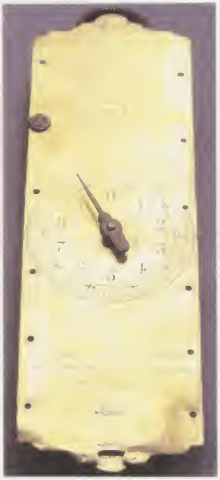


Fig. 4. Salter's Model 60 T was the work-horse of the Grimsby Fish Docks. These scales measure 4$^1/_2$" wide by 14" long and have a 20 lb capacity with 10 lbs shown on the dial & graduations on the slide for each additional 10 lbs.

Siebe Parcel Balance?

BY MICHAEL ROBINSON

Any member with a passion for spring balances made by Siebe or Marriott may be surprised to see the anonymous Parcel Post balance that has just been discovered. Showing the British postal rates for 1886 to 1897, the following features are typical of Siebe:

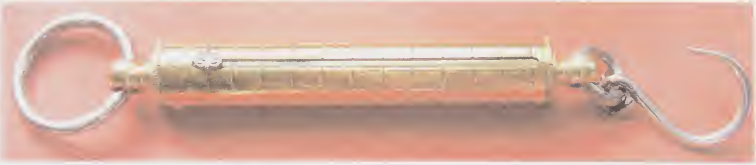


Figure 1. ↗↗ Anonymous parcel spring balance with seven characteristics of Siebe's balances. Normally Siebe stamped the numbers, but this example has the graduations engraved, perhaps because few were made.

1. Beautifully engineered steel split ring as the handle.
2. Two screws fixing the blued-steel pointer. Some Siebe pointers are single, where the graduations are all to one side of the slit, and some are double, where the graduations are both sides of the slit.
3. Extremely fine steel hook, on which to hang the parcel by its string-fastening.
4. The graduations divided by a dot between each line.
5. Brass caps, top and bottom of the brass tubes, each having fine knurling round the rim.
6. Brass rings extending from the caps, top and bottom, are rugged, rounded castings with a hole through for the top ring and the bottom hook, not a mere loop.
7. The spring is concealed by an inner brass tube that descends with the hook when loaded. The spring is attached to the top of the outer tube, and to the bottom of the inner tube. This expensive addition forces the spring to move exactly vertically.

Do any members own letter or parcel balances carrying the Siebe name, or with the characteristics listed above?

I was puzzled by this balance, as Parcel Rates came in long after the death of Augustus Siebe, and it was only by going onto the Internet that I was able to find a possible explanation for Siebe's high-quality workmanship's continuing. His son-in-law, Gorman, continued as Siebe-Gorman & Co Ltd, and, I assume, continued to make his father-in-law's spring balances.

Augustus Siebe was born in Pruisen in 1788. He was an engineer and then an artillery officer in the army. After the battle of Waterloo in 1816, he emigrated to London, and by 1819 was living at 6 Crown Court, Soho,

Figure 2. ↗↗ Details of the anonymous spring balance. No maker, other than Siebe, made spring balances of such a high standard. As no catalogue is known, the price compared with the price of an ordinary spring balance is not known. Note the heavy brass loop for holding the split-ring and the knurled 'lid' of the tube.

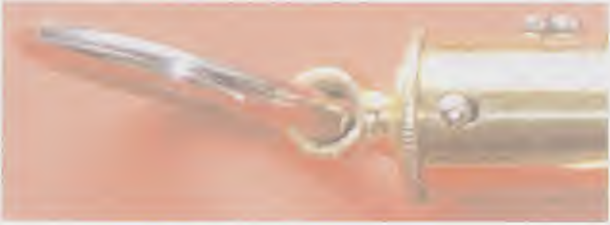
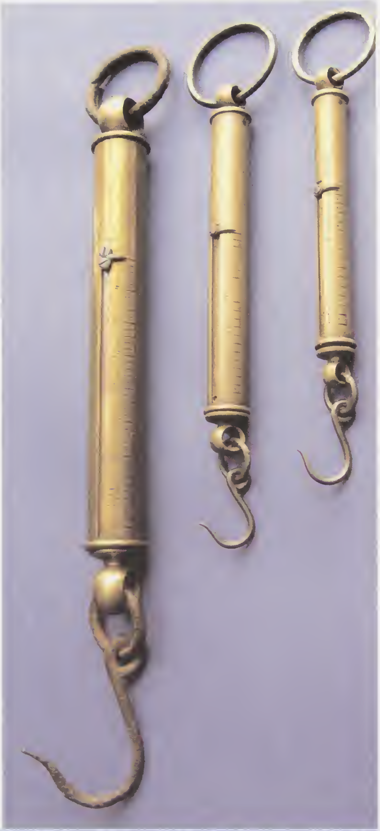


Figure 3. ↗↗ Three Siebe spring balances for trade use. The largest, of 40lb capacity, is 11½ ins (285mm) long. It is stamped above the slit A SIEBE, PATENT, LONDON. The middle one, of 20lb capacity, is stamped A SIEBE, LONDON. The little one has a strong spring for its size, having a 15lb capacity, and has the same stamp as the large one.

The use of the term 'Patent' is mis-leading. Siebe did not patent his helical spring balances, and anyway he had no patent protection after the 1820s. These two balances may have been made before 1825, but it seems unlikely.



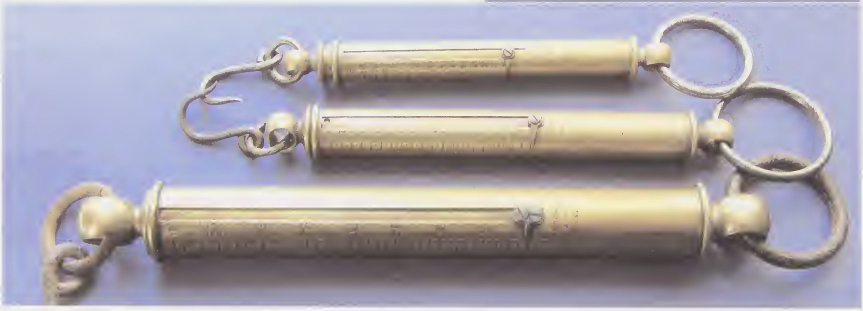
London, a narrow, congested alley of houses built in the 1680s. That year he got his first English patent, no. 4358 for his "Improved Weighing Machine", a dial-faced spring balance with either an oval flexure spring inside or a lyre-shaped spring. Already he was demonstrating his characteristic high-quality workmanship. The brass casing was very heavy gauge, and he used a strong bayonet fitting to attach the dial to the casing, so that repairs could be carried out.

In 1828 Siebe patented, with Henry Marriott, a rotary water pump, Siebe's address being Prince Street, Leicester Square and Marriott's being Fleet Street. Sales numbers were formidable and Siebe had his first financial success. The length of the partnership is not known, but Marriott, while working independently, continued to make dial-faced spring balances to Siebe's design and of Siebe's quality.

In 1830 Siebe moved to 5 Denmark Street in Soho. He got married, and eventually had nine children.

Around 1834 the Deane brothers consulted Siebe, to help them to turn their "smoke helmet" into a real divers' helmet. This helmet was successfully used by Charles Deane in many salvage operations. George Edwards suggested

Figure 4. ↗↗ The three balances have inner tubes that protect the spring by differing lengths. The smallest balance has the best inner tube, as even when it is pulled down fully, the spring is still hidden. The largest balance has an inner tube that exposes the spring when it is half way down the graduations.



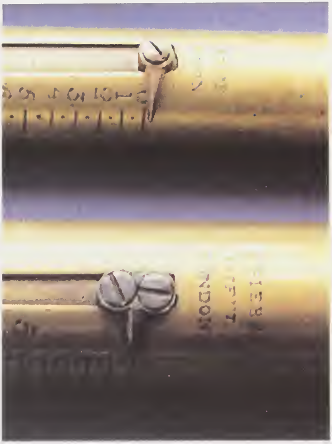


Figure 5. ◄◄ Two of Siebe's designs of pointer. The parcel balance has the third design, with two tips, pointing at graduations on both sides of the slit.

improvements in 1838, bolting the dress to the helmet and creating another excellent source of revenue for Siebe. He was eventually acclaimed as "the father of diving" by an English Heritage blue plaque outside 5 Denmark Street!

In 1850, Siebe manufactured one of the first ice-making machines. He won numerous medals at the Great Exhibition of 1851, (including one for his person-weighing machine) and the Paris Exhibition of 1855, and was elected an Associate of the Institution of Civil Engineers in 1856. Other inventions included a paper-making machine and a breech-loading rifle.

At some point he was working at 145 High Holborn Road, where he made a dial spring balance. In 1872 he died at 5 Denmark St. His obituary described him as "*retiring, kind of heart and honourable in all his dealings.*"

His name continued after his death in that of Siebe-Gorman & Co. Ltd. No record could be found of when the partnership started with his son-in-law, Gorman, but the continuing manufacture of diving equipment was highly profitable. In the 1870s they extended the principle to land-based breathing equipment for fire-fighting and mine rescue. In 1876 Siebe-Gorman moved their operation to the Neptune Works at Boniface Street, London, then to the Neptune Works, Chessington, Surrey, with an experimental wing at Surbiton. In 1940 they were at 187 Westminster Bridge Road, London S.E.1, temporarily at Park Lane, Ashtead and ultimately in 1975, at Cwmbran in Wales. The company continued until the 1990s.

I think Siebe would have been delighted that his ideas resulted in such a long-lasting production.

Acknowledgements

With thanks to D Crawforth-Hitchins for biographical details.

Author's Biography

This latest contribution by Michael Robinson follows a succession of articles and news dealing with scales-related objects that have excited Michael. In the UK he is known particularly for his visits to members spread all over the UK, telling members which items in their collections are new to him, or rare, arranging for photographs be taken, and then telling others of his 'finds'. He has acted as our ambassador for many years, encouraging shy people to join and pushing mature members to make new efforts in their collecting.

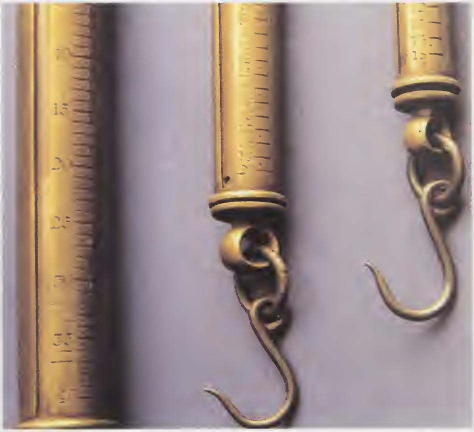


Figure 6. ►► Siebe's graduations are normally very distinct. A workman did the marks wrongly at the bottom of the largest tube.

Meloney Automatic Registering Milk Scale

BY UTZ SCHMIDT

Do you remember my article from the year 2000[1]? Wait until you read the article below. You will be blown away by all the additional information. There are a few repetitions, but referencing back and forth would disrupt the story. Maybe I also count a bit on our advanced ages, when a lot of things get new every time we read them.

The first scale of this kind crossed my path in 1999. A collector friend brought his latest trophy to a Show and Tell during a get together at my home. You can understand the excitement to be able to touch and see such a unusual scale, totally intact, even including the cabinet, the original Record Cards with punch marks and hand writing from 1903 (Fig. 1). There was no question, I wanted it desperately. When the friend started to complain about the few dollars he paid for it, 'goodhearted' as I am, I offered compensation, even increasing it to a crazy amount of money; but nothing convinced him to leave this marvel to me. I had to go public; so I wrote a short article a year later in *Equilibrium*. It ended with the sentence: "Wanted Dead or Alive." My still gloomy eyes envisioned this as part of a poster. Only just recently was I able to add the treasured Meloney to my own collection as depicted in Fig. 2. With a hand-hewn floor-to-ceiling beam, I tried to recreate the likely location in a barn; the various breeds

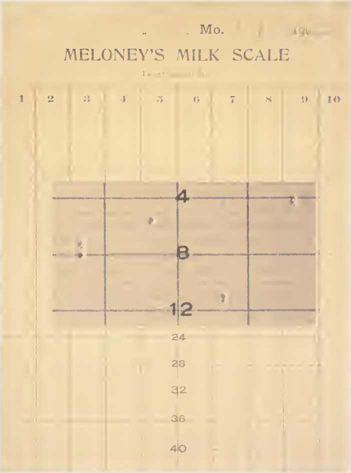

Mo.
190
MELONEY'S MILK SCALE
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Fig. 1 ↗↗ Record Card with graduated chart and columns for 10 cows and weights from 4 to 40 pounds. This is an original card from 6-19-1903. The enlargement in the center shows 6 genuine prick marks. Cow 7 gave a mere 4 lbs of milk. cow 6 yielded 11 lbs. Was number 7 in trouble?

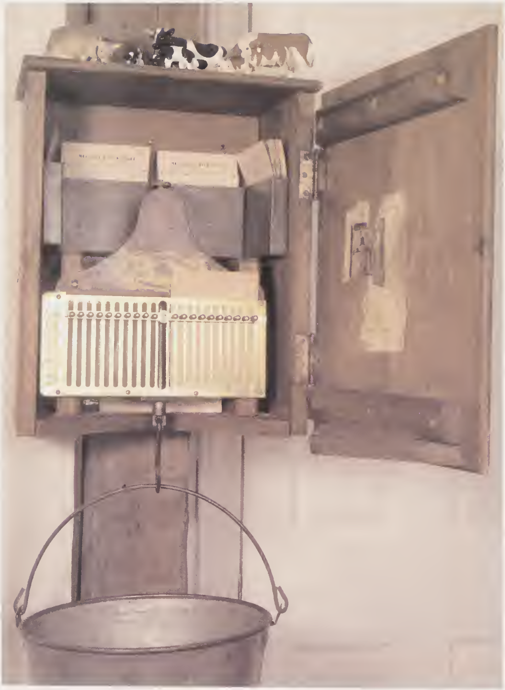


Fig. 2. ↖↖ Open Sesame! The mounted scale is hanging in its protective cabinet. At the top are the screws to attach the cabinet to the wall of the milking shed. Behind and above the scale are four sheet-metal pockets for record cards. Two cards were inserted at each milking. In the middle is the spring balance, with a thumb screw for tare weight adjustment with an empty bucket. On each side of the spring a card is inserted for the recording process.

of cows on top depict the surrounding, but for understandable reasons, mostly of marital origin, I had to skip the smell.

To make the story complete, I also added more details on the dairy farming aspect, the background and reason for the development of dairy scales in general and so to this special one. There might be one or the other of us, who grew up on a farm and knows it all, but there are always the others, or former city slickers like me, who just like the stuff but don't know too much about it, maybe nothing.

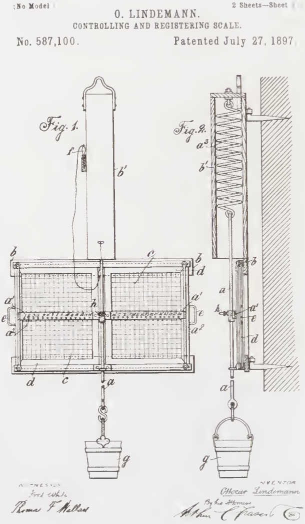


Fig. 3. Drawing for Patent No. 587.100 Sheet 1.

The industrial development, starting in the middle of the last century, led to a rapid growth of cities with a big demand for food, including milk, butter and other dairy products. Between 1850 and 1900 the population of our big cities multiplied by a factor of seven. Can you believe that the population in 1850 New York was below 700,000 and Chicago had as few as 30,000 people? The developing dairy industry searched for higher output with a higher quality of milk, which simply meant, more pounds of milk per cow and higher butter-fat content, the main ingredient of cream. What a coincidence that Darwin had published, in 1859, *The Origin of the Species*, which now allowed breeding of superior dairy cattle, the Guernsey and Jersey, for milk with high butterfat. The existence of our main milk producer nowadays, the Holstein cow, for large amounts of lower fat milk, was documented for the first time in 1870. What a challenge for the farmer, he had to breed, feed and even select cows for his herd according to their productivity. In the process he recognized that the nutrition and feeding of the cattle, plus the quality of hay and composition of silage, impacted on the success. But there was still the unanswered question of how to measure it. It was detected early on, that the specific gravity of milk changes with the fat content; so the most logical step was to weigh the milk and define its specific gravity. This second step was later replaced with a more accurate method of defining the fat content, because temperature and composition of solids could lead to faulty results. And that's the reason why we, on the producing side nowadays, still measure milk in pounds and not in gallons.

Everything was still new and with the following story the author Adolf Schoeneman leads us back in time in his book, *Milk Testing*, edited in 1895. Farmer James Dietrich is the owner of two cows; his favorite is Bess, a fine large cow with a daily yield of 32 pounds of milk. Daisy, he says, will be sold; she gives only 22 pounds of milk and eats just as much food. So, one fine day he went down to the cheese maker, which tested the butterfat content for Bess at 2.8% and for Daisy at 4.6 %. Then it was calculated that good Bess produced a mere 0.896 pounds of butter fat, Daisy on the other hand 1.012 pounds, almost 13 % more. James was astonished at those results and admitted spontaneously, *I came near selling my best cow for beef. I am so glad you helped me.* (Author's comment: In his joy he might have even hugged him.)

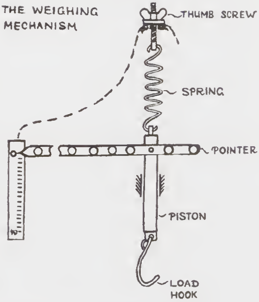


Fig. 4. The weighing mechanism.

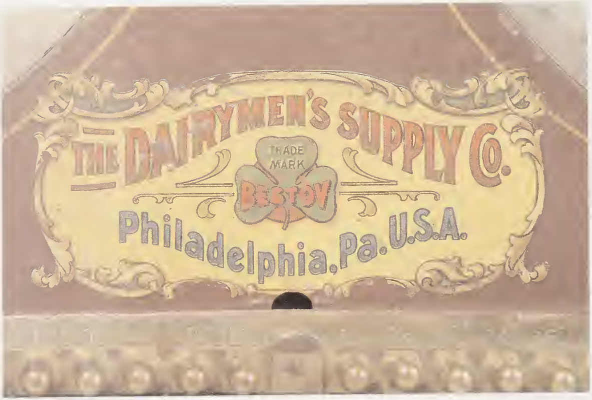


Fig. 5. ↗↗ Decal. The scale itself is painted terracotta with a gold line. The shown decal and also the one on front of the cabinet is yellow with a green clover-leaf in the center, red writing for the companies' name and blue for the address. The scrolls are golden with green backgrounds, all very decorative and eye-catching.

The scale collector within me beams, recognizing the importance of scales then and now, for our society. Can you imagine the run for scales? Every dairy farmer wanted his own, and with growing herds, a more efficient one. Ottocar Lindemann from Has-serode, Germany, found a brilliant solution for the issue. In 1895 he patented in Germany a "Registrirwaage ...," patented it as well in 1896 in Switzerland and filed at the end of the same year for the identical design, a USA patent. It was titled *Controlling and Registering Scale*, granted on July 27, 1897, with the patent number 587,100 (Fig. 3). The claims are broad in scope in typical lawyer language. Read for yourself a few lines: *What I claim is – 1. In registering apparatus for weighing different quantities of a product, the weighing-scale for weighing successive charges, in combination with a graduated chart having a plurality of columns, a cross-bar opposite said chart…3…so that the weight can be marked on the chart by a marker pushed through the corres-ponding hole in the cross-bar…* I think this proves the point. Everything but the kitchen sink is included. Verbiage like this makes it a lot easier to prove coverage by the patent, in case the patent owner wants to sue a similar design for infringement, with the goal of royalty payments to himself. On the other hand, the patent sketch shown in Figure 3 depicts clearly the functional parts of a Meloney scale (Fig. 4). It is drawn with a lot of love for detail. And remember, when you admire

Milk Output Control. N° 6397 - On the 24th of the month of December 1897, at 11 o'clock in the morning, Mr. Ottocar Lindemann, from Wernigerode-on-the-Harz (Germany) appears at the chamber of commerce in Brussels and deposits triplicate samples of the trademark shown below. Which trademark Mr. Ottocar Lindemann declares to adopt for his trade in agricultural controlling equipment. This logo consists of a rectangle, depicting a stable with two rows of animals; in the left corner, a farm hand records on a control chart; on the right a maid milks a cow; at the top is the inscription "Cow-Controller." It is to be applied on control panels of agricultural controlling equipment. It may be applied on flat, recessed, in relief areas and in all colors. It may be used in the dimensions of the registered sample, or in larger or smaller dimensions.

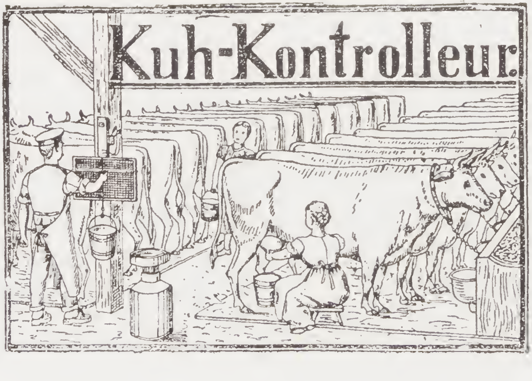


Fig 6. ➤➤ Trademark, granted in Belgium to Ottocar Lindemann. It depicts, hanging on a post, an 'Automatic Controlling and Registering Milk Scale.' Prior to this date he already held patents for this scale in Germany, Switzerland and the United States.

From *Recueuil official des marques de fabrique et de commerce contenant les…* by Belgium Ministère de L'industrie et du travail, published 1898.
Original text in French, from the Harvard University Law Library.

this piece of art, that in case you made a tiny mistake in those days, you had to start all over again. By the way, this still applied in my early years as a young engineer.

At this point we know very little about Ottocar Lindemann. My friend Steve Beare, my big help in research, detected, in the truest sense of the word, most of the facts from the next three paragraphs.

Ottocar's patent address lies just 15 miles from my birthplace in Germany. His very unusual name allowed us to trace him on the 1891 and 1901 census to London, England, as a quite wealthy Naturalized British Subject, being a "Merchant for Machinery," with a governess and two servants in his employ. In 1930 at the age of 79 he came, for the first time, to the United States in order to visit his son Otto in Wyncote, Penn. After all the above efforts and expenses to protect the design mainly in Europe, it could be expected to find in the old world at least a version of this scale; but at this point of the initial research not even a trace was located. But the far bigger surprise was Steve's discovery of the Belgian Trademark file from 1897 (Fig 6). Wow, it shows a dairy barn with Ottocar's patented scale, mounted to a beam. The writing "Kuh-Kontrolleur" can be translated to "Cow-Controller." You even see the maid milking by hand. What a historical legacy. Thanks, Steve. It is still murky if, how and why Ottocar made the business contact with a company in Philadelphia. The clover leaf on the decal (Fig. 5) might possibly be a clue; on the other hand it might be just the sign of the family's Irish heritage.

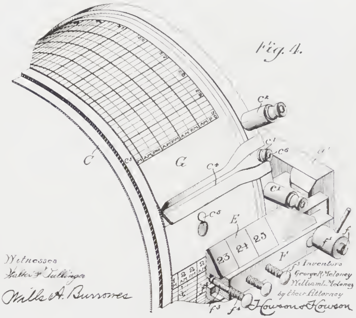


Fig. 7. Patent 915,620 from 1909, Patent Fig. 4

Now let's shed light on the names on the scale and the connection between Meloney and the Dairy Supply Company. The first person who comes to mind is George R. Meloney. When I found, in 1999, on the cover of an issue of *Cream Separator* the fancy "Meloney Milk Cooler," I guessed about a name connection to the Meloney scale. It was a reprint of an ad in *Hoard's Dairyman* from May 8, 1908. George Reid Meloney applied in 1890, at the age of 25, for its patent. It was granted in the same year under No. 436,288. In 1899 he is listed as the secretary of the Creamery Association of Eastern Pennsylvania a position he still held in 1905. The same building also housed The Dairymen's Supply Co. The 1900 census of Philadelphia shows him living on 810 Norwood St. as a *Manufacturer Dairy Supplies* and in 1910 with an address in a more affluent area, 4809 Springfield Ave., as the president of the

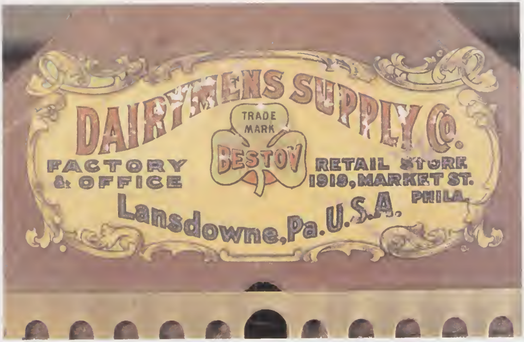


Fig. 8. By 1908, the Dairymen's Supply Co. had moved their offices to Lansdowne, PA but their retail outlet was at 1919 Market St. in Philadelphia as evidenced by the label on my scale.

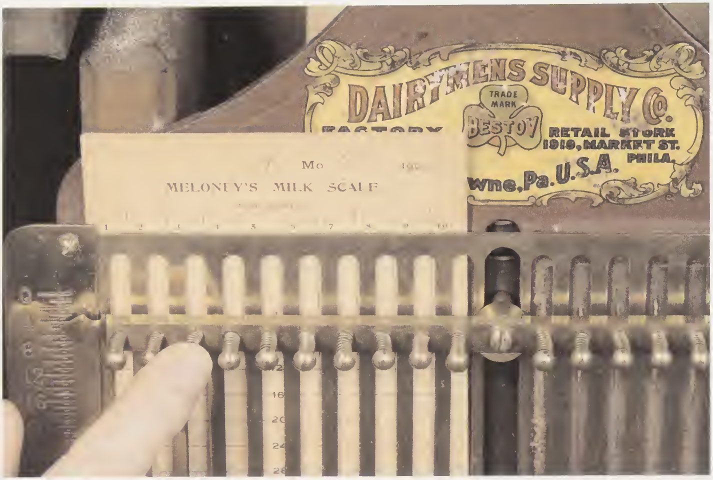


Fig 9. ↗↗ Push the button. Cow # 3 is milked and the pail, full of milk, hangs on the spring balance. The dial arm with knobs descends. Now the farmer pushes the knob of column 3, perforating the card, so recording the result of that one milking. The spring, wrapped around the knob, reverts to the neutral position, as soon as the farmer stops pushing.

company. He left us a legacy with his patents No. 481,801, from 1892, for a Butter Box and No. 915, 620, from 1909, for a Milk Weighing Scale (Fig. 7). What a coincidence, the pushbuttons shown in Patent Fig. 4 survived; they remained the functional part of the registering process. We also learn that George and his brother William L., the co-inventor, assigned their patent to The Dairymen's Supply Co.

I know, I really bore you with these little details, but they all are evidence and might help you in dating your own favorite Meloney collectable. The Dairymen's Supply Co. was organized in 1890, as listed on the second page of catalog No. 8, ca. 1898, with the address 1937 Market Street, Philadelphia, where they remained at least until 1905. Now, going back to the last patent, we learn about a relocation prior to the filing date in February 1908 to Lansdowne, Pa. The label of my own scale (Fig 8) shows that only the factory and office moved, but the retail store remained in Philadelphia, moving at a later time to 1919 Market St. The company flourished, the money kept flowing also with help of the more modern "Milk Weighing Machine," a 1911 invention from George. So he had been able to buy, according to the *Philadelphia Inquirer* 6-16-1921, the buildings on 1916 and 1918 Market St. for the amount of $115,000. It seems he owned now quite a stretch of this street. Unfortunately he could not enjoy the fruits of his labor and ingenuity for very long, because he died in 1915, at the age of 51. His 10-years-younger brother had preceded him in 1910, at that time being Manufacturer of Dairy Supply. It is unfortunate that I have no date for an ad of the Meloney in the *Country Gentleman*; so I miss out on another building block for the company's history.

"Now you know the rest of the story," as Paul Harvey would say. That's how the 'Meloney' came into the picture, as the *latest novelty in Automatic Registering Milk Scales.* What progress! You could record the daily amount of milk for 20 cows on two little cards by just punching holes (Fig. 9 & 10) and do the math in the evening with clean hands in your warm living room. I think that's about what the salesman would have said in offering this certainly expensive scale. The debate is

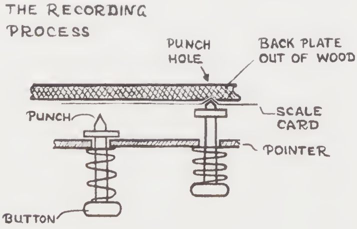
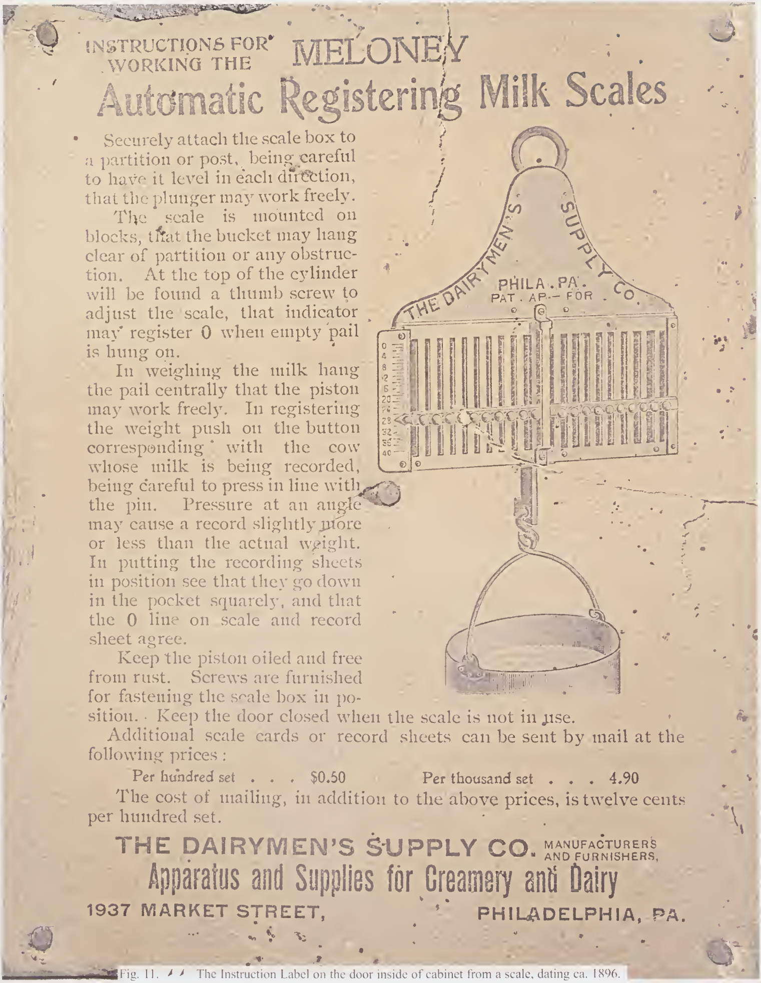


Fig. 10. ↗↗ The recording process.


THE DAIRYMEN'S SUPPLY CO.
PHILA. PA.
PAT. AP.— FOR
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INSTRUCTIONS FOR WORKING THE MELONEY

Automatic Registering Milk Scales

Securely attach the scale box to a partition or post, being careful to have it level in each direction, that the plunger may work freely.

The scale is mounted on blocks, that the bucket may hang clear of partition or any obstruction. At the top of the cylinder will be found a thumb screw to adjust the scale, that indicator may register 0 when empty pail is hung on.

In weighing the milk hang the pail centrally that the piston may work freely. In registering the weight push on the button corresponding with the cow whose milk is being recorded, being careful to press in line with the pin. Pressure at an angle may cause a record slightly more or less than the actual weight. In putting the recording sheets in position see that they go down in the pocket squarely, and that the 0 line on scale and record sheet agree.

Keep the piston oiled and free from rust. Screws are furnished for fastening the scale box in position. Keep the door closed when the scale is not in use.

Additional scale cards or record sheets can be sent by mail at the following prices:

Per hundred set . . .	$0.50	Per thousand set . . .	4.90

The cost of mailing, in addition to the above prices, is twelve cents per hundred set.

THE DAIRYMEN'S SUPPLY CO. MANUFACTURERS AND FURNISHERS,

Apparatus and Supplies for Creamery and Dairy

1937 MARKET STREET, PHILADELPHIA, PA.

Fig. 11. The Instruction Label on the door inside of cabinet from a scale, dating ca. 1896.

still on concerning when the first "Meloney Automatic Registering Milk Scale" was produced. It could have been as early as 1896 before Ottocar's USA patent was granted, as we could conclude from the instruction label (Fig. 11) with the abbreviations PAT(ent) AP(plied) FOR . But there is also the other option, moving the date to 1898; assuming that the Meloney brothers had their own patent, possibly for the spring-loaded buttons as an improvement of Ottocar's design. To their disappointment it was rejected because of Ottocar's patent claim. This thought has its own merits, considering that the later literature does not mention a patent. The closest statement you can read in the No. 24 catalog, ca.1915: *The Meloney Automatic Milk scale is an outcome of some 15 years' studying and experimenting, not only here in our shop, but with the aid of some of the best dairymen in the country. While it is not perfection, it is a long way in advance of anything else in line.*

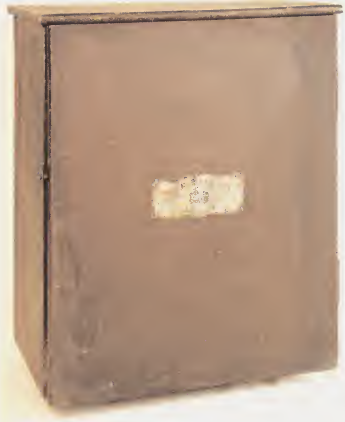
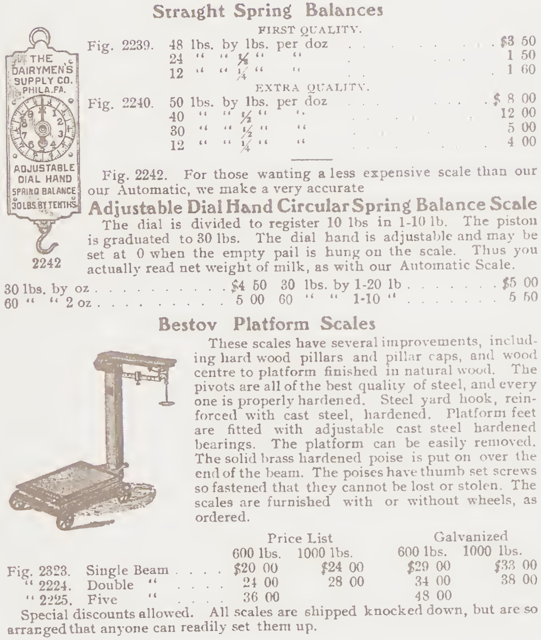


Fig. 12. ↗↗ The cabinet ca. 1896 is shown because of its rarity, especially with the original colorful decal.

The price started ca. 1889 with $10 for a scale, one pail and 31 record sheets. With increasing sales, the company was able to hold the price for the same contents, as we see in the BESTOV Catalogue about 1900, but now the scale was mounted in a cabinet, *Attractively made out of wood. Finished in hard varnish* (Fig. 12). This edition also depicts (Fig. 13) *Straight Spring Balances with the company name*, sold by the dozen for various weight ranges, and for larger amounts of dairy product there was the "Bestov Platform Scale." About 1914 there was a major improvement in the catalog. *At the request of one of our largest western ranches, we have perfected the Double Deck Automatic Scale* (Fig. 14). *This is identically the*


THE DAIRYMEN'S SUPPLY CO. PHILA.PA.
ADJUSTABLE DIAL HAND SPRING BALANCE 30LBS.BY TENTHS
2242

Straight Spring Balances

FIRST QUALITY.

Fig. 2239.	48 lbs. by lbs. per doz	$3 50
	24 " " ⅛ " "	1 50
	12 " " ¼ " "	1 60

EXTRA QUALITY.

Fig. 2240.	50 lbs. by lbs. per doz	$ 8 00
	40 " " ½ " "	12 00
	30 " " ½ " "	5 00
	12 " " ¼ " "	4 00

Fig. 2242. For those wanting a less expensive scale than our our Automatic, we make a very accurate

Adjustable Dial Hand Circular Spring Balance Scale

The dial is divided to register 10 lbs in 1-10 lb. The piston is graduated to 30 lbs. The dial hand is adjustable and may be set at 0 when the empty pail is hung on the scale. Thus you actually read net weight of milk, as with our Automatic Scale.

30 lbs. by oz	$4 50	30 lbs. by 1-20 lb	$5 00
60 " " 2 oz	5 00	60 " " 1-10 "	5 50

Bestov Platform Scales

These scales have several improvements, including hard wood pillars and pillar caps, and wood centre to platform finished in natural wood. The pivots are all of the best quality of steel, and every one is properly hardened. Steel yard hook, reinforced with cast steel, hardened. Platform feet are fitted with adjustable cast steel hardened bearings. The platform can be easily removed. The solid brass hardened poise is put on over the end of the beam. The poises have thumb set screws so fastened that they cannot be lost or stolen. The scales are furnished with or without wheels, as ordered.

		Price List		Galvanized	
		600 lbs.	1000 lbs.	600 lbs.	1000 lbs.
Fig. 2323.	Single Beam	$20 00	$24 00	$29 00	$33 00
" 2224.	Double "	24 00	28 00	34 00	38 00
" 2225.	Five "	36 00		48 00	

Special discounts allowed. All scales are shipped knocked down, but are so arranged that anyone can readily set them up.

Fig. 13. ↖↖ This advertisement was found in the BESTOV Catalogues, published by the Dairymen's Supply Company for 1900 - 1908.

Has any member seen these scales?

Compliments of Hagley Museum and Library, Wilmington, Delaware.

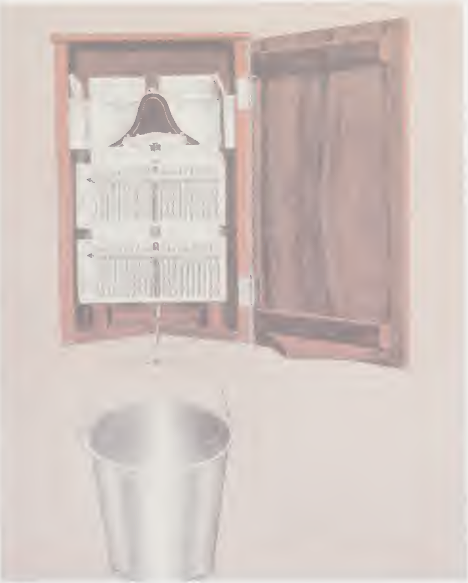


Fig. 14. ✓ ✓ Meloney "Double Deck." BESTOV Catalog No. 24 ca. 1914. Courtesy of the Hagley Museum and Library.

same as 2 single scales mounted tandem, except that both dial arms are mounted to the same spring, so that the pail on the hook will register on any of the forty buttons at one time.…Cards may be ordered, numbered from 1 to 10, 11 to 20, etc., as high as 81 to 90 or unnumbered cards will be sent if required. Collector friends, here is our new challenge. Let's not rest, until we have at least a picture of the Double Deck.

In search of a production increase, the company found additional venues to sell the Meloney. The Baker & Hamilton Catalog from 1916, is proof. It gives us also an interesting detail about one of the company's suppliers: *The dial arm is supported by the finest Chatillon scale spring.* The Meloney scales were still produced in 1920 and sold for $25, as the picture in this fancy company catalogue indicates. It is a special edition, shaped like a cloverleaf, very likely in celebration of the 30th anniversary of the Dairymen's Supply Company with the cloverleaf, containing the "BESTOV" trademark.

The Meloney scale was, at the time, a big step forward but to me all this looks like a lot of work. And we all should be very thankful for the numerous improvements done afterwards, because nowadays we have to test the milk for herds, sometimes exceeding two thousand cows. By the way, in case you ever want to leaf through one of the BESTOV Catalogues, published by the Dairymen's Supply Company (ca. 1898; 1900 – 1908; 1914; 1917; 1920), you have to visit the Hagley Museum and Library in Wilmington, Delaware.

For installation, usage and care of the Meloney, I don't want to deprive you of the joy of reading an original label, shown in (Fig. 11). It is self-explanatory. In order to enhance the descriptions, I took a few pictures from my own scale and made two sketches to demonstrate the function of the scale. The views with the remark, *dating from about 1896*, belong to an older scale, the one which still makes my mouth water. Did you read my determination between the lines, when I talked about the Double Deck Automatic Registering Milk Scale? This time I would kill to get it.

Notes and References:

1. EQM pages 2489 - 2492. Early Recording Milk Scale.

Hope you enjoyed reading the above. Does anyone own the Book: *When the Cows Come Home*, mentioned in catalog No. 24 ca. 1914? It might contain important company history. Also in case you have proof of an error, more information on the company, or any of its products or other rare dairy related scales, please send a copy or picture to me, Utz Schmidt.

The Dating of a Particular Salter Letter Scale

BY ANDRÉ SOL

I received an email with a short description of a letter scale. The scale belongs to a collector of scales made by Salter. Probably it is a model 11 of Salter. The presumably porcelain dial shows a subdivision per 15 grams. In this way the stripes are set up to 495 grams. A final stripe is set at 500 grams. The unit of measure is abbreviated as Gr. The dial has the following text (in French), partly in graceful writing:

Pese Lettres
Salter & Co.

DUTRY COLSON GAND BELGIUM

Interieur 10 c par 15 Gram
Hollande et Luxembourg 20 c par 15 Gram
Union postale universelle
25 c par 15 Gram.

Translated it reads:

Letter scale
Salter & Co.

DUTRY COLSON GHENT BELGIUM

Inland 10 c per 15 Grams
Netherlands and Luxembourg 20 c per 15 Grams
Universal postal union
25 c per 15 Grams

I was asked to put a date to this letter scale. Both photos, received later, present this special Salter letter scale; see Fig. 1 and Fig. 2. The scale has a richly ornamented housing of cast iron. At the base are flowers and leaves.

In Equilibrium No. 2, 1982[1] a reference to a patent is given on page 455. It was granted to J. Silvester and has the date January 11, 1867. On page 456 a picture is shown of a Salter scale made according to this Silvester patent. Therefore the scale in question dates from 1867 or later. EQM No. 1, 1983[2] states on page 524 that the design pictured at the left in Figure 24 on page 525 was introduced in the 1890s (looks an odd late start to me) and that the design was still available in the 1930s. In EQM No. 3, 1989[3] is stated on page 1262 that this letter scale, made according to the patented design of J. Silvester, was still popular in 1920. So the date information in EQM is not really clear and unambiguous.

The design is presented in older catalogs of George Salter & Co. In the catalog of April 1886[4] this letter scale is on page 17 named as letter balance number 11. Also on page 91 of the catalog of 1898[5] this letter scale is presented as "letter balance No. 11"; see Fig. 3. Also the presumption that it has a porcelain dial is confirmed on the same page. The fourth and at the same time most expensive version: "porcelain dial and nickel-plated scale" price 8/0 each. An extra recommendation is made at an asterisk *These last will not discolor, and the figures being burnt in cannot be erased. Their appearance is superior to that of the enamelled dials.* (It is spelled *enamelled* in the English catalog) Finally there is the sentence: *If Electro Copper Bronzed, 6d each extra.*

The catalog states a capacity of 24 ounces and the scale is subdivided per quarter ounce. This is converted into grams 24 times 28.35 is 680. 4 grams. Therefore, this Salter with the capacity of 500 grams contains a different sized spring. The version with the porcelain dial is not specified anymore in the Salter catalog of 1924.

The dial reads *Pese Lettres*. That is almost correct French for letter scale. In the past one wrote *pèse-lettre*, nowadays one writes *pèse-lettres*.

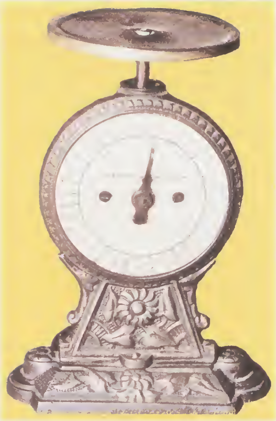


Figure 1.

Searching the internet I found that "Dutry Colson" was a department store in Ghent (Gand) in Belgium. A catalog from 1911 exists (Maison Dutry-Colson, Gent, Catalogue général du petit outillage, no 610, 480 1911). Also Belgian postal stamps from 1902 exist with the perforation DC (Dutry-Colson). The firm apparently was large and important enough to have their own name put next to Salter on the dial. The postal rates mentioned on the scale must be Belgian postal rates. Translated it reads:

Inland 10 c per 15 Grams
Netherlands and Luxembourg 20 c per 15 Grams
Universal postal union
25 c per 15 Grams

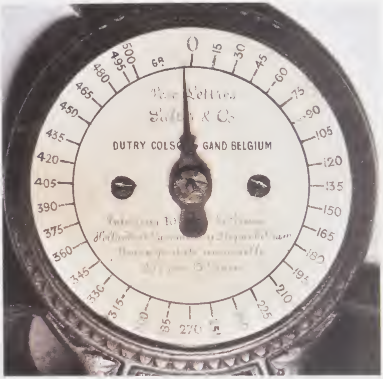


Figure 2.

The Universal Postal Union was established in 1874. The letter scale is from a later date. I traced an informative website (unfortunately not available anymore) with a survey of the Belgian postal rates in the past. The postal rate information results in the following periods in relation to the destinations stated on the dial:

An inland letter up to 15 grams with 10c (c – centimes) gives the period 1868-1909. In 1909 the switch from 15 grams to 20 grams as weight limit was made.

A letter up to 15 grams to the Netherlands or Luxembourg at 20 c(entimes) results in the period May 1, 1875 – June 19, 1876.

A letter up to 15 grams to other countries belonging to the Postal Union also results in the period May 1, 1875 – June 19, 1876.

Also noticeable is the lack of the Salter logo on this letter scale. I have seen a similar Salter letter scale elsewhere. That one had a brass dial with a Salter logo and the number 11. The engraved rates were equal to the above-mentioned rates.

In summary: it is certain that this particular Salter letter scale, especially made for Belgium, dates from the very short period May 1, 1875 – June 19, 1876.

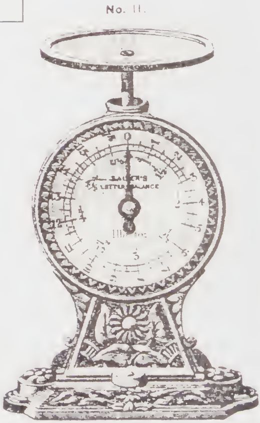


Figure 3.

Notes & References:

This article was first published in the Journal of the Dutch Society of collectors of Weights & Measures. In Dutch: *Meten & Wegen*, No. 130, June 2005, pp. 3100-3101. It was translated and slightly edited by the author.

1. Patent Postals, Michael Crawforth, Equilibrium No. 2, 1982, pp. 453-456.
2. George Salter & CO. (part 1). Michael Crawforth, EQM No. 1, 1983, pp. 515-529.
3. Pop it in the Post – Part 2, D.F. Crawforth, EQM No. 3, 1989, pp. 1252-1264.
4. Geo. Salter & Co, catalog of April 1886, p. 17.
5. Geo. Salter & Co – 1898, catalog, p. 91.

Winfield's Rare Candlestick

BY MICHAEL ROBINSON

This postal candlestick is so rare that the long-term collectors involved in preparing this article all said, "*This is the first and only one I have seen*". That was quite a claim when compared with the ubiquity of most postal scale designs, and particularly of Winfield's more ordinary candlesticks.[1]

It stood out immediately because it was large in comparison with Winfield's 1840 design, being 10½ ins (267 mm) tall, as compared with 8 ins (200 mm) for the 1840 design. This was in keeping with its capacity - 8 oz - double the capacity of his ordinary candlesticks.

It was covered with lively scroll-work, which was easy to achieve, as the whole casing was pressed brass, like Winfield's tiny candlesticks, not solid cast-brass, like Winfield's more expensive candlesticks.

Getting up close, the spring just became visible, being almost hidden in the top of the tube, with the slot for the pointer way down the tube.

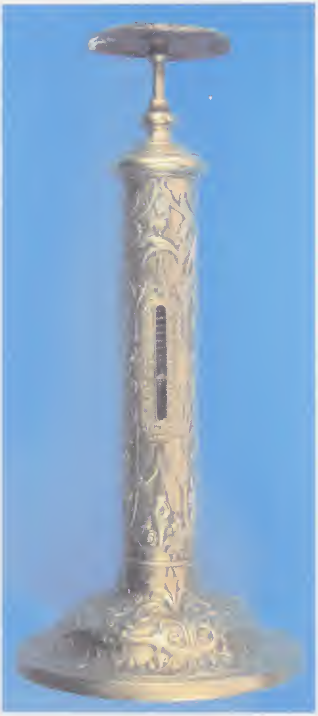


Figure 1. ↗↗ The newly discovered Winfield candlestick. The top pan is partially depressed by a hidden load.

This looked odd, when I was accustomed to seeing the slot at the top and the spring clearly visible below the pointer.

Holding the candlestick in a good light, the lettering below the slot was legible "REG^{D} 25 MAY 1852".

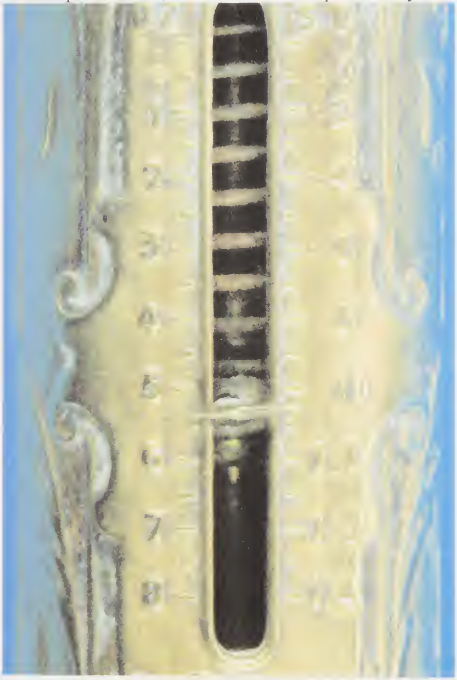


Figure 2. ↖↖ Close-up the postal rates of 6oz for 1.0 (one shilling) and 8 oz for 1.4 (one shilling & four pence). The rod descending from the top-pan shows inside the spring. The collar holding the pointer is visible. The tension spring is also visible.

Figure 3. ↖↖ The soft pressing of the Design Registration 'REG" 25 MAY 1852'.

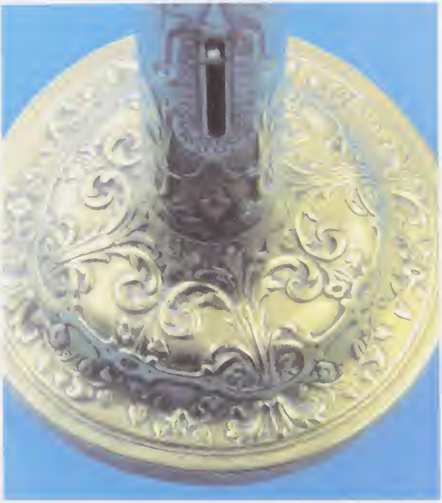


Figure 4. ↗↗ Winfield's rare candlestick, 10½ ins (262 mm) of pressed brass. The pattern is a little difficult to interpret, but it is probably trails of Morning Glory.

What? 1852? I was familiar with the 1840 Design Registration, for Winfield's handsome plain candlestick, and with the 1848 Design Registration, for Winfield's glass candlestick. But 1852? I had to obtain the registration to find out what Winfield intended. See page 3371 for the complete document.

Winfield made the registration sound very novel, but was it? Winfield had been using pre-prepared plates screwed to the front of the tube since 1840, all identical, so where was *the trouble of graduating by experiment a different scale for each*? He was not having any trouble with his compression springs! Even the number manufactured implies that he was highly successful with the earlier compression springs, and apparently, not successful with the torsion spring.

The postal rates were those for 1840 to 1865. So this rare candlestick had to be made between 1852, when Winfield registered the design, and 1865.

Now I had seen this 1852 design, I went back to the earlier designs with renewed interest. What was Winfield building on?

The first Design Registration No. 170, of 13 Jan 1840, had no words on the drawing. Many examples survive of this first design, which was made of substantial cast brass tube, with a heavy brass base, 6⅜ ins (162mm) tall. It was gilded with burnished gold round the tube and a band of burnished gold round the inner part of the base. The rest was matt gold.

The registration of 1840 was cast onto other base designs, and was claimed into the 1850s, long after the protection had expired. One suspects that the Design Registration System had no means of patrolling the use

Dates Significant for Winfield

1827, 4 Dec	no. 5573	Winfield Patent for making tubes or rods from rolled & soldered brass sheet
1840, 13 Jan.	no. 170	Winfield Des Reg for brass Candlestick postal for 4oz, with no postal rates
		Also covered his giant Candlestick postal for 16oz, with no postal rates
1848, 5 Sept.	no. 1569	Winfield Des Reg Glass tube Candlestick postal, for 4oz with postal rates
1848, 14 Sept.	no. 12268	Winfield Patent for extruded brass tubes for making articles that are in part made of tubes
1852, 25 May	no. 3267	Winfield Des Reg for tension spring Candlestick for 8oz, with postal rates
1852	no 13914	Sturgess Patent for Ornamenting Metal Surfaces[2]

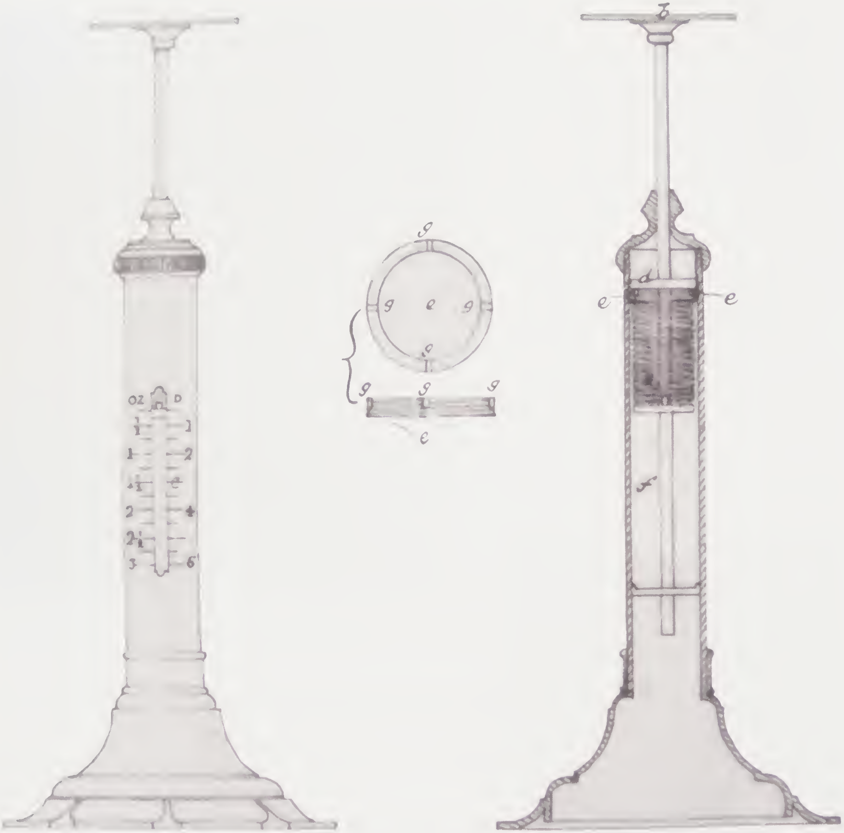


Figure 5. *The useful object effected by the novel forms in my design is facility in the construction of spring letter balances. [Left drawing] represents my design in elevation. [Right drawing] represents the same in vertical section and [centre drawing] being represented twice as large as the corresponding part in [right drawing].* ***a*** *is a helical spring by the elongation of which the weight placed on the stage* ***b*** *is indicated in the scale* ***c****; the spring* ***a*** *is supported on the ring* ***d*** *and the said ring* ***d*** *rests on the ring* ***e****. The said ring* ***e*** *is furnished with a convex screw as shown in the [centre drawing] which engages in the concave screw in the interior of the upper part of the cylinder* ***f****. The said ring* ***e*** *is furnished with notches* ***g g*** *for the introduction of a screw driver by the use of which it may be raised or lowered to such a position in the hollow cylinder* ***f*** *that the pointer* ***g*** *may stand at zero on the scale* ***c*** *when the stage* ***b*** *is unloaded. By constructing the several parts of the letter balance of the form described and represented great facility in the manufacture of spring letter balances is attained inasmuch as the elongation of springs of different lengths being uniform by the pressure of the same weights by bringing the pointer to zero as described, a uniform scale may be used for different balances and the trouble of graduation by experiment a different scale for each avoided. The form of the parts marked* ***e*** *&* ***g*** *is new. The rest is old. The drawing is to a geometric scale.*

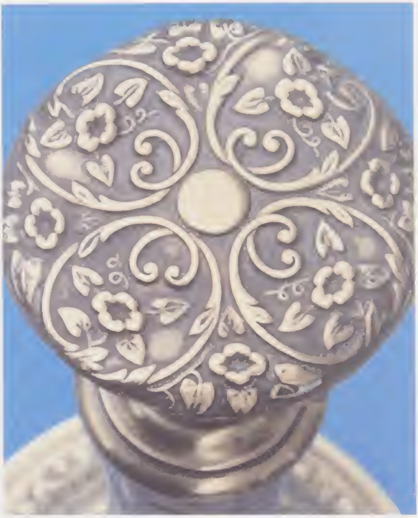


Figure 6. ➤➤ The top-pan showing the pressed design of morning glory.

of the claim, so manufacturers gained spurious protection for many years! Most people would not have knownthat the protection lasted for only three years.

Even the giant candlestick (13½ ins. high) was labelled 'No. 170, JANUARY 13 1840, R W WINFIELD, BIRMINGHAM', although it had different features. The top external cap was domed, not concave, the petal design round the base was different from the original, and it had three rollers or wheels placed round the rod at the bottom of the tube, yet another sign of superior workmanship.

Where did Winfield get his idea for a top-pan spring balance? Salter did take out a patent on 9th July 1838 for marking the graduations on the outside of the tube which holds the spring (as opposed to putting the graduations on the rod below the tube). This idea was an essential precursor of the top-pan spring balance, but Salter made no mention of mounting the tube on a base. There are no examples of top-pan spring balances known to have been made before 1840. The top-pan was only suitable for light, compact loads that would balance symmetrically on a small pan, so maybe Winfield had to wait for the Penny Post to stimulate the desire to privately weigh letters before he could market his dainty postal scale.

The second design registration of 1848 stated:

> ***Design for A Letter Balance, Robert Walter Winfield, Birmingham, Proprietor, 1848***
>
> *The novelty in this letter balance consists in the barrel* ***a*** *containing the spring which said barrel is made of glass enamel or other vitreous substance; a rectangular opening* ***b*** *is cut in the said barrel in which the index* ***c*** *works.*
>
> *The claim is to the form of the glass barrel* ***a*** *with the rectangular opening* ***b****. The rest is old.*

Interestingly, this claim makes no mention of the inclusion of postal rates. If Winfield had seen the utility of adding the rates, (and he did paint them onto the glass tube,) why not mention them? With hindsight, I know that the gilding rubbed off the glass tube all too easily, leaving a pretty but useless object! Note that the slit really was cut with a fret-saw!

The iron rod, (with a thin brass sleeve over the iron) attached to the top-pan, went down the centre of the helical spring and slid down through a hole near the bottom of the tube vertically, and thus preventing the top-pan from tipping sideways. The earlier design just had a thick collar inserted in the tube, the collar having a hole in its centre. The glass candlesticks had a more elaborate method of keeping the rod moving. A rim of brass was capped over the base of the glass, with four braces going to the middle point underneath. From this middle point a tall, narrow brass cup ascended, to meet the collar inserted in the tube, down which the rod was pushed by the load. Thus the rod was hidden from view inside the cup. Rather than threading the inside of the glass tube, the bottom collar is screwed to the base, and was thus adjustable in position. I wish that this feature were mentioned in the design registration with an explanation!

The first and second designs depended on a compression spring attached to the bottom of the tube. The top of the spring was covered by an internal brass collar that held the pointer in position. The rod was attached to this cap where it descended through it. The pointer was the last part of the scale to be assembled, being put into the collar from outside. Amazingly, the price of the two earliest examples in a private collection, both made before Winfield added postal rates, was only 2/-. Two shillings was a very low price for such substantial scales.

I have seen a few glass candlesticks that did not match the 1848 design registration. Instead of having a full glass tube, they had the 1840 brass tube, with a glass dome forming the base. The dome was bright green, and the edges were protected by two bands of gilt cast-brass ivy leaves, a very pretty combination. See EQM, page 3104, figure 18. Was the small dome a prelude to the idea of a whole tube and base all of glass?

The use of lace to press a superficial pattern all over the tube was patented by Sturgess in 1852, so I date those Winfield candlesticks that have a similar lacy decoration to after 1852, even though Winfield did an engraved imitation of the genuine pressed lace decoration. This form of lacy design was obviously popular around this time, but Winfield could circumvent Sturgess' patent by using engraving to achieve a similar look. Winfield no longer claimed a Design Registration on those late balances, even though they conform to the 1840 design. He did put postal rates on them, an idea that seems to have started around 1848. So those can be dated between 1852 and 1865.

Has any reader got a Winfield candlestick with postal rates after 1865? Or any other means of dating later examples?

Notes & References

1..Winfield was the proprietor of a huge manufactory making numerous brass items, including bed-steads, lamps etc. When I say, "*Winfield did this*" perhaps I should properly say, "*Somebody in Winfield's company did this*".

2..Lamb, D, 'The Decoration of Metals: Two Victorian Patents,' *The Journal of the Antique Metalware Society*, June, 2001, pp. 1-3

Acknowledgements

With thanks to Charles Tomlinson for lending his newly-discovered 1852 design, to Andrew Crawforth for help with the engineering and to D Crawforth-Hitchins for help with the text.

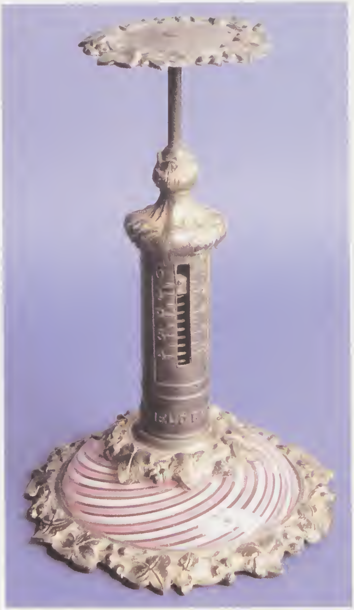
Showcase

Michael Robinson referred to the Winfield Candlestick postal with a green glass, domed base. This swirly version came onto the market this year. It is such fun to discover a new variation not mentioned in the literature previously.

It is 6½ ins (140 mm) tall, with the postal rates for 1840-1865, and has a 4 oz capacity. The spring is below the pointer, being a compression spring. The tube has the engraved version of lacy decoration, so it must have been made after 1852.

By holding the glass up to the light, it is possible to see that the rod does not descend into the dome. The pointer hits the bottom of the slot before the rod descends that far. The base is filled underneath by an iron disc, which presumably was glued into the base.

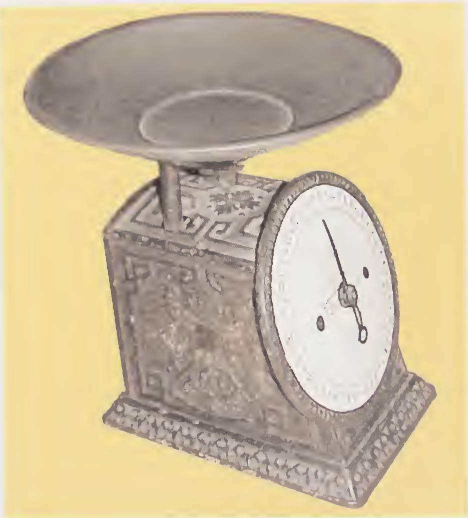
Diana Crawforth-Hitchins Collection



Showcase

Figure 1. ➶➶ This cast iron German Family scale is marked "Reichsadler - Waage" 12 1/2 kg - garantirt genau, [translated, guaranteed to be exact; the word *garantirt* is an old way to write the word] - D. R. Patent. The manufacturing date of the scale is definitely after 1870, when Germany changed to metric and during the time the country still had emperors (Kaiser Reich). So it seems to be before 1918. Outside graduations in black show 12 1/2 Kilo (Kilogram) while the inside graduations, lighter in color, show 25 Pfd. (Pfund or Pound). That shows it is soon after the change to the metric system. This scale measures 5.5 inches wide by 7.5 inches deep by 9.25 inches tall to the rim of pan.

Utz Schmidt Collection.



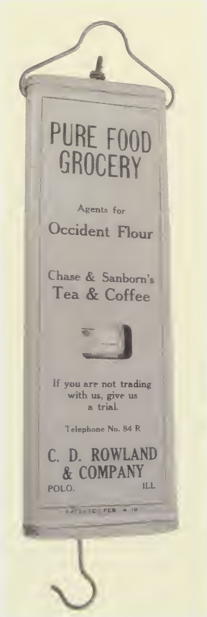


Figure 2. ➷➷ This advertising spring scale is marked as patented Feb. 14, 1911 which indicates C H Colson's patent number 984264. However, it physically looks more like Colson's patent number 1468227 of Sept. 18, 1923 for a parcel post scale. Colson's earlier patent shows but one window for values while the parcel scale shows five windows which would indicate that this scale is based on the earlier patent with modifications to the case design that were implemented in his later parcel post scale patent. This scale advertises CD Rowland & Co of Polo, Illinois and was most likely for household use as it has a capacity of 5 pounds by 2 ounce increments. It measures 3" wide by 12" long including the hook and ring and is 16" thick.

Phil Wehman Collection.

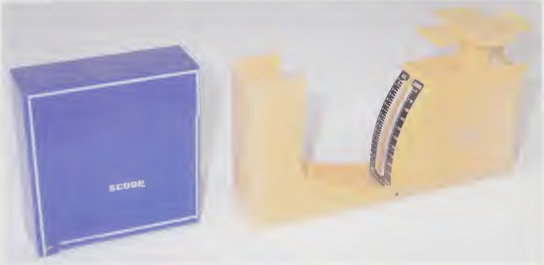
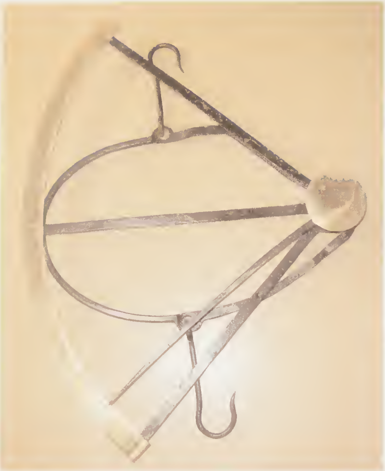
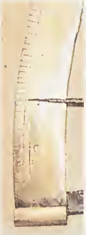


Figure 3 ➶➶ These colorful little scales were designed as diet, weight watching or postal scales. Patent number 3584696 was issued on June 15, 1971 to Bernhard Eblowitz of Bellmore NY. The scale is similar to other bow front scale patents but adds a protective cover to protect or hide the scale when not in use. The capacity is 16 ounces by 1/2 ounce or 450 grams by 10 grams. Each measures 3 1/4" square closed and 7" long when opened. Inside the cover of each is molded Geneber Associates, Inc, New York, NY, Patent Pending.

Berning Collection.

Showcase





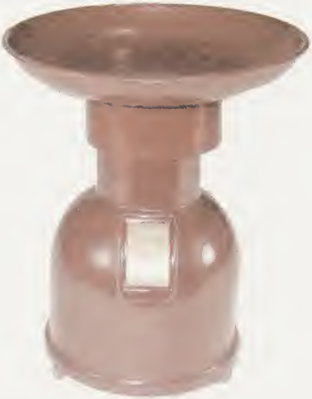


Figure 5. ➚➚ The dark burgandy family scale shown here was patented in the US by E Rüdiger of Berlin, Germany on April 27, 1937. The US patent noted that this scale was also patented in Germany on February 13, 1935. It is graduated in grams from 0 to 500 by 5 grams. It measures 9" tall with a $5^{1}/_{2}$" base diameter, a $7^{1}/_{2}$" diameter plate and is made of Bakelite. The patent reads in part: *the weighing of small quantities is effected by a pendulum weight balance without loose weights and after passing through this precision range, a spring balance becomes operative.*

Berning Collection.

Figure 4. ➚➚ This spring scale is marked TB patented. It measures 13" x 18" and has a 28 pound capacity. Thomas Braby made this scale while working at Vine Street in Lambeth, England. Braby's father James got a patent in 1837 for the construction of carriages and Thomas used a carriage spring type of device in the scale shown here. It is a proper flexure spring scale with its smithing ancestry clearly visible. The brass arc shown in detail, right, curls round at the bottom to form a stop for the pointer. Very few of these rare scales are known to be in existence. See EQM pages 1911-1916 for more information on the Braby's. Robert Jibben Collection.

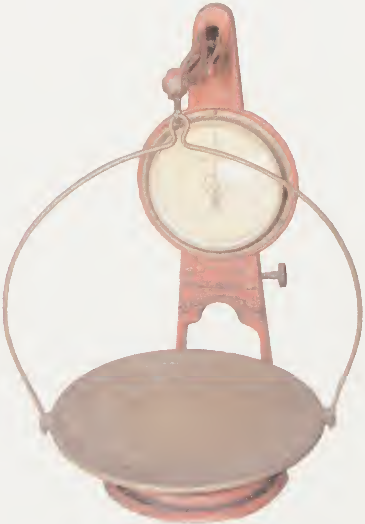


Figure 6. ➚➚ This cast iron scale is marked on its face, Eureka Scale Company, New York patented October 5, 1869, Style "C". The Eureka Balance could be found in the Chatillon Scales and Balances catalogs of 1894 to 1900 and was sold in 5, 10 and 16 lb capacities. When a load is placed on the brass pan the attached arm acts as a lever which pulls on the spring that is attached to the rack which moves the pinion which turns the direct drive dial shaft.

Simon Ingersoll was issued patent number 95,588 on October 5, 1869 for an improvement in spring scales. Ingersoll was born in Stamford, CT March 3, 1818. He was living in Queens, NY during the 1850 census but moved back to Stamford, CT by 1860.. Simon was a prolific inventor, best known for his invention of the rock drill in 1871, which led to the present Ingersoll-Rand company. Ingersoll was issued patent RE5082 on October 1, 1872 for the same scale. This second patent was assigned to John Ryer an Iron Founder from Brooklyn and Joseph Hollely listed in the Brooklyn, NY directory for 1860 as a brass founder and in the same directory from 1870-1874 as a Scale Manufacturer. An ad for a counter and hanging scale produced by the Eureka Scale Company, 30 Cortlandt St, NY, first appeared in *Pomeroy's Democrat*, Chicago, June 8, 1872, and ran for several issues. The Eureka Scale Co. is listed in the New York city directories for 1872 and 1873.

Private Collection.

Homepride Flour Scales

Spillers and Nephews began manufacturing pre-packed flour in south Wales, UK in 1897. Robbins and Power began marketing Homepride as a prepacked flour brand in the 1920s in the Midlands. The Homepride brand was later sold by Spillers. In 1949, self-raising flour was invented by Henry Jones of Bristol, England. Home Pride brand was soon discontinued in order to concentrate on other local brands of flour.

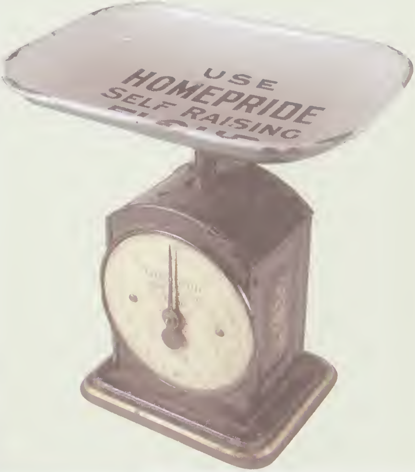


Fig 1. ↗↗ The enameled plate of this family scale reads *Use Homepride Self Raising Flour* while its face reads *Home- Pride Self Raising Flour, British Made, to weigh 20 Lbs by 1 Oz.* The friction-fit plate measures 10¾" x 7¼", is enameled in white with black lettering and a dark green underside. The scale itself, including the pan, measures almost 11 inches tall. The scale face also shows the Salter knot and it is interesting to note that a scale, identical to this one, is shown on page 55 of the 1920 Salter scale catalog where it is listed as a Hughes' Family Balance. Since self raising flour was not invented until 1949, it is evident that this scale was in production for many years.

Berning Collection

In 1963 Spillers abandoned their local brands and brought HomePride back as a national brand of flour. Flour at this point was more consistent in texture with no dust or large grains.

In 1964, American copywriters Bob Gross and Bob Geers pitched a new advertising campaign to Spillers and Homepride Fred was born. Fred has become a national icon in England and likenesses of him exist in many British kitchens and in many different items.

Notes:

http://www.homeprideflour.co.uk

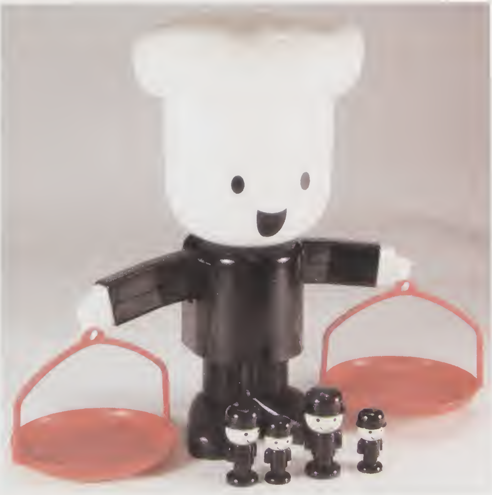


Figure 2. ↖↖ The Homepride Fred scale is very collectible. The base of Fred's shirt is marked as follows: *Made in England by Peter Pan Playthings. LTD by Courtesy of Homepride Flour © Spillers LTD 1979.* The chef's hat may be removed and the head used as a mixing bowl. Inside a set of measuring spoons are stored. The 4 Fred weights are marked from left to right. 1 oz © Spillers 28.4 g, ½ oz © Spillers 14.2 g, 2 oz © Spillers 56.8 g and ½ oz © Spillers. Fred turned 40 in 2004.

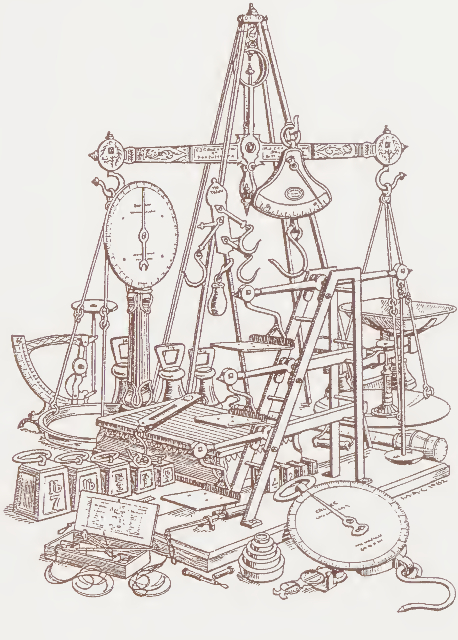
Crawforth Hitchins Collection.

ISASC

EQUILIBRIUM ®

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

MAY 15 - 19, 2008 CONVENTION ISSUE CHATTANOOGA, TN



INTERNATIONAL SOCIET

PRO

All events are in Eastern Daylight Time unless noted (CDT) Central Daylight Time.

THURSDAY, MAY 15, 2008

10:00 A.M. - 5:00 P.M.
ARRIVAL • HOTEL CHECK-IN -CONVENTION REGISTRATION

5:00 P.M. - 9:15 P.M.
TOUR & DINNER AT TENNESSEE AQUARIUM
See shuttle schedule.

FRIDAY, MAY 16, 2008

9:00 A.M. - 1:00 P.M.
TOUR THE NATIONAL TOWING MUSEUM & WEHMAN SCALE COLLECTION
See bus schedule.- Lunch on your own.

1:30 P.M. - 6:00 P.M.
ON YOUR OWN OR OPTIONAL TOUR (SEE REGISTRATION DESK)
Sightseeing • Shopping • Sleep

6:30 P.M. - 'Til......
COLLECTOR'S GET-TOGETHER, OFFICIAL WELCOME,
SCALE TALK, ALBUM-SHARING, CAMARADERIE
Light meal and beverages served.
Ballrooms 3 & 4

SATURDAY, MAY 17, 2008

9:00 A.M. - 12:00 NOON *Walker Room*
KEEPING EQUILIBRIUM ON THE LOOKOUT MOUNTAIN INCLINE RAILWAY

THE WOOL WEIGHT ENIGMA

A VISIT WITH THADDEUS FAIRBANKS

12:30 - 1:30 P.M.
LUNCHEON BUFFET
Broad Street Grill

TIQUE SCALE COLLECTORS

RAM

2:00 P.M. - 5:00 P.M.
SILENT AUCTION
Followed by Let's Make a Deal
Coordinated by Bob Jibben and Judy Soslau
Ballroom 2

6:30 P.M. - Til...
GALA RECEPTION AND BANQUET
West Foyer, & Ballrooms 3 & 4

SUNDAY, MAY 18, 2008

9:00 A.M. - 12 NOON
Walker Room
"SHOW AND TELL"
Jerome Katz will chair: Special treasures from our members.

BUSINESS MEETING
Officer reports, floor discussions and comments. Peter Laycock, President.

12:15 P.M. - Til...
LUNCHEON BUFFET
Ballroom 1

Balance of day free time.

MONDAY, MAY 19, 2008

POST CONVENTION OPTIONAL TOUR TO LYNCHBURG & NASHVILLE, TENNESSEE
8:00 AM EDT Bus Departure
9:00 AM CDT OR 9:15 AM CDT TOUR of Jack Daniel's Distillery
11:00 AM CDT LUNCH at Miss Bobo's

2:00 PM - 3:00PM CDT
TO NASHVILLE TO SEE SCALES COLLECTED BY WILLIE EDENS

RETURN TO HOTEL

SEE YOU NEXT YEAR IN KANSAS CITY, MISSOURI!

IN ATTENDANCE*

Charley and *Dawn* Amsbaugh, Westminster, Maryland
Alan Atha, Monroe, Georgia
Stephen and Kathy Barnett, Ellicott City, Maryland
Steve and Karen Beare, Wilmington, Delaware
Jan and William Berning, Sycamore, Illinois
Jane & John Bersch, Medford, New Jersey
Kurt and Ann Beyreis, Maurertown, Virginia
George Chase, Atlanta, Georgia
John and Betty Cheeseman, Dorset, England
Norman and Phyllis Cima, Menlo Park, California
Dick Clark, Portland, Oregon
Mike and Joan Crabtree, North Bend, Oregon
Jim Dietrich & Joyce Glazier, St. Charles & Saginaw, Michigan
William and Mary Ellen Doniger, Berkeley, California
Mary Easton, Downers Grove, Illinois
Leslie and Elaine Firth, Mercer, Pennsylvania
Robert Foster, Dayton, Nevada
Joe and Carolyn Ghilarducci, Lakewood, Washington
LeRoy & Cleo Gossett, Ephrata, Washington
Lawrence Herrera, Dallas, Texas
Carol and Bob Hayden, Austin, Texas
Gregory and Judy Hill, Mira Loma, California
Fred & Jacquie Huhman, Jefferson City, Missouri
Arline and Bill Jacobson, Bayside, New York
William and Nancy James, Orinda, Califonia
Robert Jibben, Minneapolis, Minnesota
Jerome and Mary Katz, Downingtown, Pennsylvania
Patrick & Judith Kelly, Weatherby Lake, Missouri
David & Mary Ann Kral, Iowa City, Iowa
Charles & Helen Lamlein, Normal, Illinois
Peter and Dian Laycock, Toronto, Ontario, Canada
Ross & Winsome Leadbetter, Chapel Hill, North Carolina
Clifford Lushbough, Aurora, Colorado
Jan and Eva Macho, La Canada, California
Clem and Katharine Monday, Oroville, California
Allan & Gloria Molenaar, Spicer, Minnesota

Each listing indicates the member's name first.
Names of members attending their first convention are in italics.

IN ATTENDANCE*

Greg Moss, Waterford, Michigan
Mary Anne Murphy, Pittsburgh, Pennsylvania
Brooke Paige, Washington, Vermont
Catherine Panagakos, Greenville, South Carolina
Larry Press Jacksonville, Florida
James, Mike, & *Richard* Reeve, Iowa City, Iowa
Allan and Aviva Rodin, Northfield, Illinois
Alex Roesch, Knoxville, Tennessee
Don Shaw & *Donna Meeks*, Cedar Rapids, Iowa
Utz & Shirley Schmidt, Palms, Michigan
Leonard Schneiderman, Omaha, Nebraska
Don & Donna Schoenly, Glen Ellyn, Illinois
John & Lois Schott, Parkville, Missouri
Barrett & Irene Silverstein, Raleigh, North Carolina
Ben & Mary Smith, Jackson, Michigan
Eric and Judy Soslau, Austin, Texas
Lorraine Texeira and Mary Krause, Pleasanton, California
Garrett and Lorie Turrall, Rochester Hills, Michigan
Tom Van Natta, Decatur, Alabama
Jaap & Ronny Visser, Haarlem, The Netherlands
Phil Wehman, Chattanooga, Tennessee
Ruth Willard, San Mateo, California
John & Margaret Wintour, Gloucestershire, England
Charles Yarton, Tigard, Oregon
John Young, Beaumont, California

CONVENTION NOTES

1. Bidder numbers for the Silent Auction are on the back of the name tag. Please wear tag to all events. If a seller needs additional bid sheets, contact Bob Jibben, Jan Berning, or Phil Wehman.
2. Be sure to bring your BUS TICKET Friday & your MEAL TICKET to the BANQUET.
3. Attire: Casual for days and evenings. Dress-up suggested for Saturday night banquet.

CONVENTION COMMITTEE

Phil Wehman - Chairman
Bill & Jan Berning, Willie Edens, Tom VanNatta

ISASC

INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

Founded September, 1976

3616 Noakes St. • Los Angeles, CA 90023 • USA

Officers and Directors 2008

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Vice Presidents	Kurt Beyreis
	Robert Jibben
	Jerome Katz
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Secretary	Carol Hayden
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Executive Secretary	Jan Macho

Number 114 May 2008

ISASC

INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

A Balanced View

Chattanooga Convention

Congratulations to Phil Wehman and his committee for hosting another fantastic convention. Over one hundred enthusiastic scale collectors assembled in Chattanooga for the 2008 ISASC convention. A full agenda kept everyone very busy starting on Thursday night and running right through to departure on the following Tuesday morning. Among the many highlights were: dinner at the Chattanooga Aquarium, a visit to view Phil's scale collection, the Silent Auction, Show and Tell and the annual banquet. On Monday there was a post convention trip to tour the Jack Daniel's Distillery in Lynchburg, Tennessee, and a visit to view the Willie Edens' scale collection in Nashville.

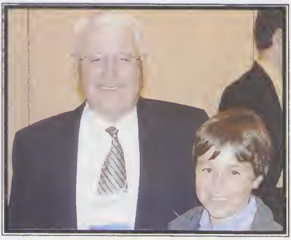
Above, Convention Chairman Phil Wehman was installed as the King of ISASC conventions by last year's convention Chairman Utz Schmidt. He is accompanied by historian/member Brooke Paige who presented an overview of the life and career of Thaddeus Fairbanks. On the right John Cheeseman and Jim Dietrich are enjoying Phil Wehman's scale collection. At the conclusion of the business meeting on Sunday John Schott and Pat Kelly presented an overview of next year's convention to be held in Kansas City. Mark your calendars now for the third week in May of 2009.

Silent Auction

Again this year there was a lot of activity at the Silent Auction. Over 35 tables of scales and other material were offered for sale. Lots of lively competitive bidding led to sales of over twenty-three thousand dollars. One hundred and sixty-nine items were sold netting the society a commission of approximately twenty-four hundred dollars. The prices ranged from ten up to eighteen hundred dollars. The Silent Auction is always a highlight of the convention and this year was no exception.

Junior Members

Attending the convention were our two junior members James Reeve and Alex Roesch. We were especially happy to have them in attendance with their families. James was accompanied by his father Mike and his grandparents Dave and Mary Ann Kral and Richard Reeve. Alex was accompanied by his grandparents Elaine and ISASC Treasurer, Les Firth.



Both James and Alex were enthusiastic and active bidders at the Silent Auction and both took home some nice additions to their collections.

The Willie Edens Jr. Collection

On Monday a full bus load of convention attendees traveled to Nashville to view Willie Edens' scale collection. Willie has been an active member of ISASC for many years and has amassed a wonderful collection of scales and scale related material. His collection today has well over one thousand scales and is growing every day. Willie was unable to attend the convention in Chattanooga, but graciously agreed to host our members for an afternoon to view his collection. Willie, a machinist by trade, has developed a passion for scales and model trains. His house is a virtual museum filled with his prized possessions, each room offered unique and interesting gems to be admired by our avid collectors. The following are just a few photos of Willie's collection.

In the top center photo Willie is presenting Phil Wehman with an ISASC 2008 Convention mouse pad. Willie had these made to be given to all who came to see his collection. We are indebted to Willie and his family for making the visit to see his collection possible.

What's New on the Website?

Check out the report of the Chattanooga convention recently posted to the website. Two new links to European members' scale collections have been added: www.stanton-instruments.co.uk (Thomas Allgeier's collection) and www.scalesandruralmuseum.com (John Wintour's collection).

Tom Dooley

We are saddened to relate that Tom Dooley passed away May 17, 2008, after a losing battle with cancer.

You may recall that after 25 years of exemplary stewardship by co-founder and President Emeritus, Bob Stein, ISASC was faced with the task of recruiting a new President to guide ISASC into its second quarter century. The Society was fortunate in enlisting Tom Dooley to become its President. Tom, a long time member of ISASC, had recently retired from the State of California where he served as the Chief Fiscal Advisor to both Houses of the Legislature. In retirement, Tom joined his wife Gloria in her antique business. Tom specialized in European scales, weights and scientific instruments. Many of us over the years have acquired some special scales from Tom.

Tom served six years as President of ISASC from 2000-2005 and did an outstanding job of piloting the affairs of the Society. Drawing on his background in California government, and bolstered by the desire for many members to help out in the organization, Tom led a well rounded group of directors to create new innovative programs.

Under his leadership the ISASC Collection Committee, the Equilibrium Oversight Committee and the Convention Committee were established. A great deal of current ISASC leadership has been found in these committees. During his tenure we also strengthened and enhanced our relationship with the European chapter.

Tom left the Society in a very strong position. He did an outstanding job and deserves the thanks of the ISASC membership. Sadly, his wife Gloria also passed away a year ago. Tom and Gloria will be missed by their many friends and fellow scale collectors.

Equilibrium

I am sure you will all agree a key benefit of being a member of ISASC is looking forward to receiving your copy of Equilibrium each quarter. Equilibrium is unquestionably the most complete and reliable source of literature on scales and metrological material. It has become so because members from both North America and Europe have shared their knowledge and expertise by writing articles for EQM. Recently EQM Editor Jan Berning requested that I ask our members to provide material for EQM. I am sure in every collection there is something really special that would be of

interest to EQM readers. Jan stated that she and others are more than willing to help with research and drafting of articles. Please take a moment to look at your most special scales and consider sharing them with us. Feel free to call or email Jan should you have any questions.
(Jan Berning 815-895-6328 jhberning@comcast.net)

Member Survey

Included in this mailing is a members' survey. Please take a few moments to complete it and return it to Carol Hayden in the self-addressed stamped envelope. The information gathered by these surveys is an important tool to assist us in planning and implementing new programs.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and encourage them to contact any of the members of ISASC should they have any questions. Hopefully, we will get a chance to meet them personally at the annual convention or at regional get-togethers.

George Chase, Atlanta, GA
Linda Loewenstein, Boulder, CO (Mark)
Martin Roenick, Eureka Springs, AR (Ellie)
Alex Roesch, Knoxville, TN (Junior Member)
Austin Stigwood, Oldham, England
Richard Stimpson, Freeland, MI (Martha)
Richard Wollack, St Helens, CA (Sue)

Michigan Regional Meeting

The eleventh annual Michigan Regional Meeting will take place on August 23, 2008, at Ben and Mary Smith's home Jackson, Michigan. Ben and Mary extend an invitation to all who wish to make the trip to enjoy a day of scale sharing and camaraderie. They can be reached by phone at 517-789-0558 or by email at bsmith1926@yahoo.com.

In Memoriam

Sadly I report the passing of:

Paula Van Natta – Paula, who had attended many ISASC conventions, passed away on Feb 18, 2008. Both Paula and Tom were active members of the Chattanooga Convention Committee.

Bob Stein – ISASC President for the Society's first twenty five years, Bob passed away on Feb 15, 2008. Recently, Bob's daughter Linda Lowenstein joined ISASC to carry on the Stein tradition within the ISASC family.

Albert Stirm – Albert, a long time ISASC member, passed away April 28, 2008. We deeply appreciate his recent donation of his scale collection to ISASC.

All will be missed by their families and their many scale collecting friends.

Supporting Your Society

ISASC has many talented, knowledgeable members who have a passion for scale collecting. Your Society welcomes your involvement with the growth and development of ISASC. If you have an interest in participating as a committee member or as a director we would love to hear from you. Please feel free to contact me or any of the board members.

Bye for Now!!

If any of you have news or items of interest you would like to share with other members of the society please let me know and I will be happy to pass them on. I can be reached by phone at 705-635-9022 or by email at pegl@sympatico.ca Until next time keep up the hunt!! I hope you find a few new scales.

Peter Laycock, President
ISASC

ISASC

EQUILIBRIUM®

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2008 ISSUE NO. 3 PAGES 3377- 3404

Cover Picture

George Salter and Co. Ltd of West Bromwich, manufactured this scale for several years. Its face features the Staffordshire knot, pierced by an arrow which was registered as the firm's trademark in 1884 and was used on Salter balances from that time on.

This Trade Parcels Balance was pictured in their 1893 and 1920 catalogs. It was given No 58T and was to weigh 100 pounds by ½ pound. It has a 9" diameter brass dial, a flat iron plate measuring 18" by 14" and measures 18 inches tall to the plate top.

Editor's collection.

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ISASC
INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

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Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

A German Letter - Scale

BY REIN KOK

In my collection of letter-scales is a peculiar German one. At first glance it's a common quadrant scale. The turn-over poise is very striking. In most European scales the turn-over poise is hidden behind the dial, but in this case it's very present (fig.1). In the upper position the pointer indicates 0 - 250 grams. When the poise is turned over to its low position the pointer indicates 250 - 500 grams and the poise partly covers the upper graduation (fig.2). This is no problem because in the low position the load is more than 250 grams.

When you look at the numbers halfway up the dial you observe these numbers make a quarter-turn. This is to prevent you from getting a stiff neck !! Near the top of the pendulum is a small knob (figs 1 and 3) and on the top of the standard is a brass screw (fig.1). When the load has reached its maximum the knob hits against this screw and the pendulum is stopped.

In European letter-scales all the movable parts turn around on axes. In this case the scale has no axes, but knives. On fig.4 you see one of the knives fixed at the pendulum. It turns in a pad as drawn in fig.5. This system gives less friction than axes and is very accurate. There is one disadvantage: it takes a long time for the scale to reach its balance. The arm on which the pan hangs is equipped with the same system. This was the first time I saw a quadrant letter-scale with knives and I have never seen another. The dial is a little bit damaged (fig.6 & 6a): at some spots the paint is flaked off, but not on important places. The serial number is still visible: Nr.6036. On the top of the standard you see the same number (fig.3). On two other places (not shown) these numbers are present: on the top of the pendulum and on the hanging pan. So all parts of this scale are original.

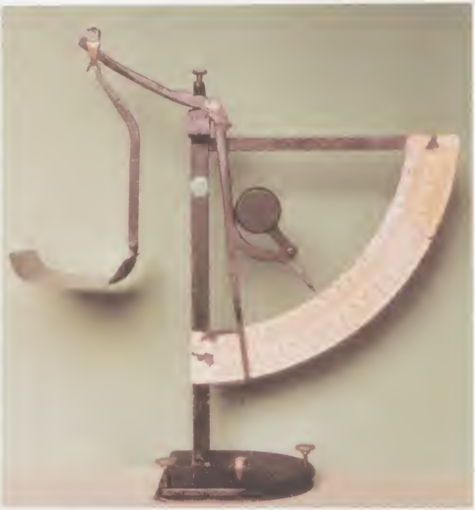


Figure 1. ↗↗

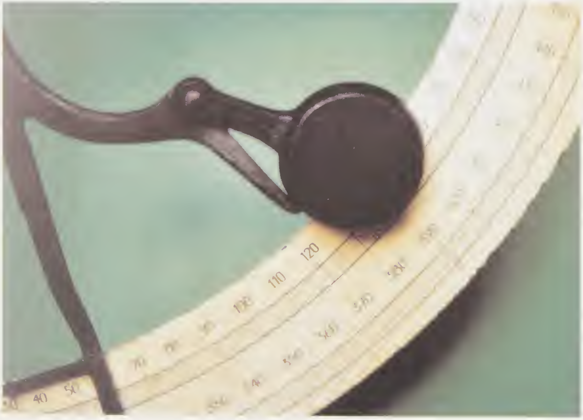


Figure 2. ↖↖

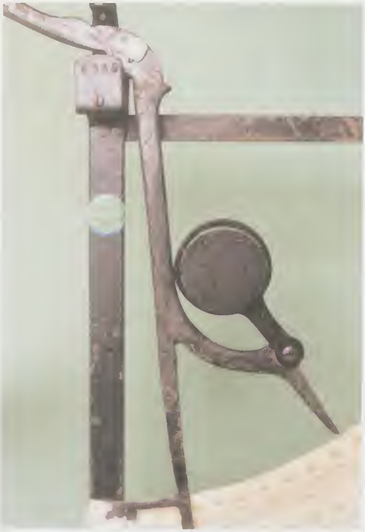


Figure 3. ↑↑

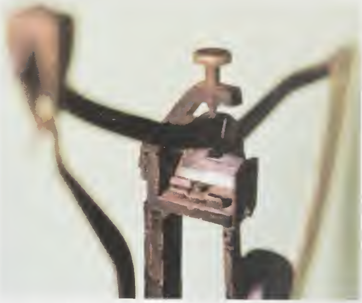
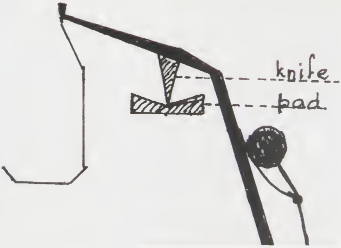


Figure 4. ↑↑

Figure 5. ↓↓



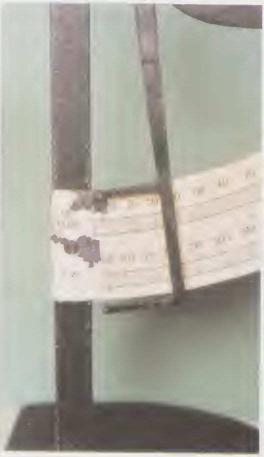


Figure 6. ←←

Figure 6A. ↓↓

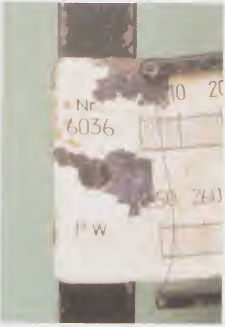
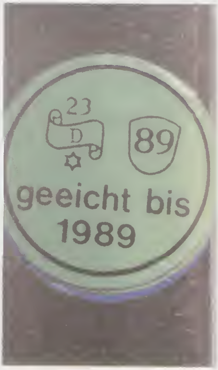


Figure 7. →→



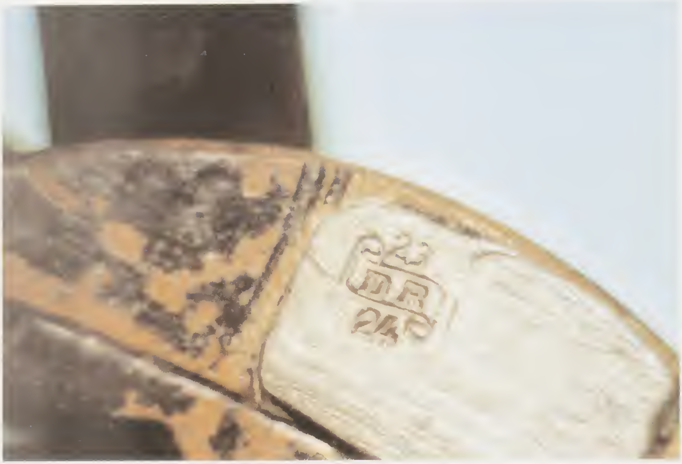


Figure 8. <<

On fig.6 are the initials P.W. Until now I don't know the meaning of this. The green sticker on the standard (figs.1 and 7) tells us this scale is "geeicht bis 89" (verified until 1989). The banderole on the sticker contains the letter D (Deutschland). Up the banderole is number 23 and down a small star. Nr.23 is the verifying district and the star is of the weights-and measures-head-office. Near the top of the pendulum is a lead strip with another verification mark (fig.8). On the banderole are the letters DR (Deutsches Reich) with the numbers 23 and 24. The last number is of the Weights-and-Measures-Office of District 23. Hardly visible on the right-hand side of this banderole is the print of a shield. This shield should refer to the year of the first verification mark, but all the marks on this lead strip have been filed away and after that the scale was given a new mark. So it's difficult to say something about the age of the scale. The letters DR on the banderole say this scale dates before 1940.

The base (fig.9) has two adjustment screws and a circular spirit-level. It measures 25,5 x 17 cm. The scale is 53 cm tall and is made of cast iron.

The author and editor welcome additional information on the maker or patents for this unusual German pendulum postal scale.

About the Author:

In my daily life I was a teacher in geography and since 1988 I am retired. In 1995 I started to collect letter-scales and at this moment I have about 400 mostly European scales. I am a menber of the Dutch Society of scale collectors, ISASC and the German Society Mass und Gewicht.

I am also very interested in archeology and geology. I am often a guide for geological excursions in the surroundings of Deventer, The Netherlands, the city were I live.

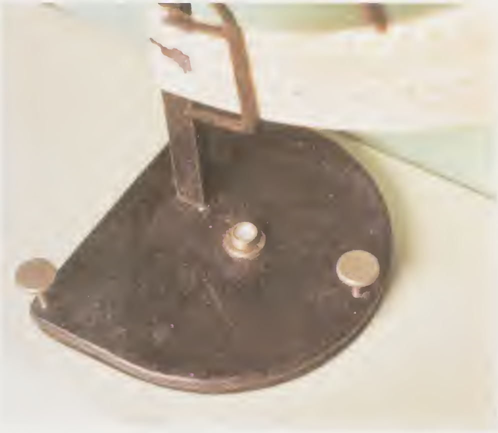


Figure 9. <<

Andrew Turnbull Scales

BY JAN BERNING

The Patentees:

Andrew Turnbull was born in 1832 in Coweston, County Renfrewshire, Scotland. It is believed that the family immigrated to the US around 1842; because of references to the New York arrival of an Andrew Turnbull age 8, on September 14, 1842 from Glasgow. Turnbull's mother was a bobbin winder and his father worked in the silk trade in Scotland. The 1850 U.S. Census shows the family living in Simsbury, Hartford County, Connecticut. At this point his father was a carpet weaver and Andrew himself was age 18 and working as a dyer in the carpet industry.

The 1860 census shows Andrew, living in Meridian, Connecticut, married with two children and working as a manufacturer. By 1870, Turnbull was living in New Britain, Connecticut, had four children and was working in a hardware shop. By 1880 Andrew Turnbull was still living in New Britain, Connecticut and by this point in his life was listed in the city directory as a scale maker. By 1900 he was a widower and was working as a building inspector and living in New Britain, Connecticut. The Register and Manual of the State of Connecticut dated 1905, lists Turnbull as a Sanitary Inspector in New Britain but by the 1910 U.S. Census Turnbull was listed as a pattern maker still living in New Britain, still a widower and age 77. He was also found in the 1920 census as a retired pattern maker, by then 87 years old, living with his daughter and daughter-in-law, both widows. The last census available to us is from 1930 and lists Turnbull, still living in New Britain, at the age of 97.

During the years 1859 – 1921, Turnbull held interests in at least 26 US patents, applying for the last one in 1919, when he was 86 years old. His patents were for such items as bed springs, toys, door bells, tools, fire escapes, a fruit parer and scales.

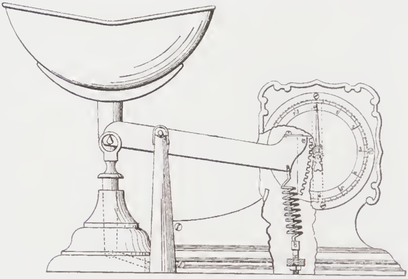
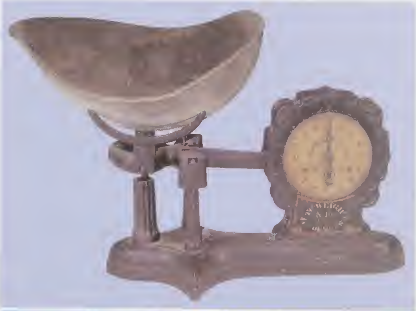


Figure 1 & 2. ↗ ↗ Patent numbers 25473 and RE5901 were issued on Sept 13, 1859 and June 2, 1874 to Andrew Turnbull. The earlier patent was assigned to Turnbull & Frary while the reissue was assigned to Landers, Frary & Clark. These early style counter scales came with 8 or 16 pound capacity dials.



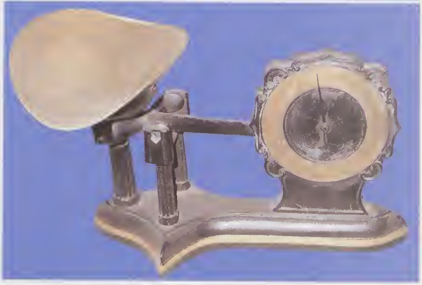


Figure 3. ➤➤ This face design, along with the one shown in figure 2 above, is found in several different styles of shop scales bearing the same patent dates. Other styles of shop scales based on these patents are shown below and all bear a Turnbull name.

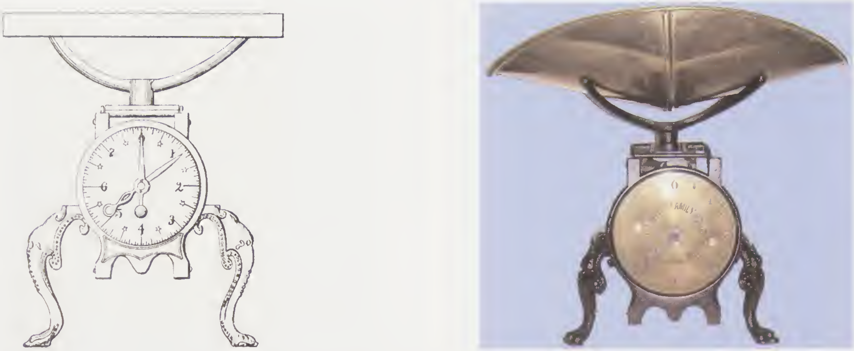


Figure 4. Jean Victor Mathivet of Cleveland, Ohio was issued patent number 107272 on September 13, 1870 for a tripod based family scale that is usually found with Turnbull's Family Scale stamped on its face. The patent reads: *This improvement consists in the addition of a loose pointer on the same spindle with the fixed pointer, and counterpoised by a weight, so that it shall stand perpendicular and indicating nothing, but which is capable of being fixed at any time so that it shall turn with the spindle and made to indicate the weight of a second article on the scales.* No example has been seen with the tare feature and the pointer is fixed on its spindle. These scales were made in 8 or 16 pound capacity.

Jean Victor Mathivet was born in Philadelphia, Pennsylvania on the 24th of August 1831. His father was a physician born in France and his mother was born in New York. He was married on the 15th of November 1853, in Cleveland, Ohio, to Mary Chidgey who was born in Bath, England. During the years from 1850 to 1860 Mathivet lived in Cleveland, Ohio and worked as a clerk. The 1870 census shows him as a retired merchant with real estate valued at $12,000. By the 1880 census Mathivet had again changed jobs and was working as a plumber in Cleveland. The 1900 census shows him living in Bedford Ohio with no occupation and still married to Mary but by the 1910 census he had passed away.

Frederick W. Runge was born in Germany and immigrated to the US in 1865. He was listed in the San Francisco city directories of 1889 and 1890 as working as a machinist at the Tubbs Cordage Co. Runge was first located on the US census of 1900 living in San Francisco and working as a machinist at a rope manufactory. The census also notes that he was a naturalized US citizen. In 1901 the city directory lists him simply as a machinist.

Jacob P. Holtzhouser, age 7, arrived in America, with his family, on October 16, 1871 from Bremen, Germany aboard the ship America. In the 1880 census of New Britain, Connecticut Jacob was working in a lock shop at age 17. During the years 1889 to 1891, according to the New Britain, Connecticut city directory, Holtzhouser was employed by Landers, Frary and Clark. In the 1892 directory he was listed as being employed by Stanley Rule and

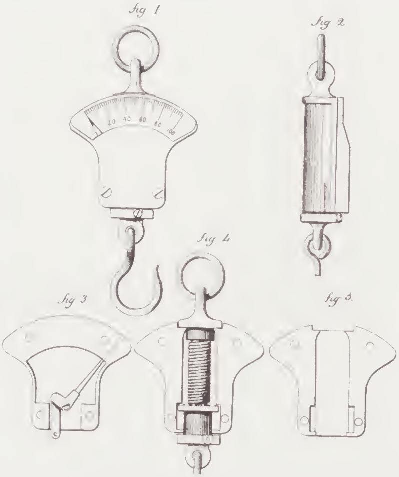


Figure 5. Turnbull was issued patent number 152195 for a quadrant dial spring balance on June 16, 1874. This patent as well as most of his other scale patents was assigned to Landers, Frary & Clark. The patent reads in part *In this construction of the shell and it's plates are each cast complete, and require no considerable mechanical labor to fit them together.* The spring, head & hanger were then finished and inserted as one piece allowing removal for repairs or replacement.

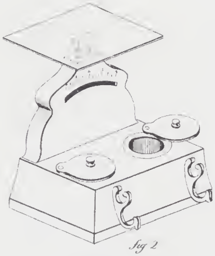
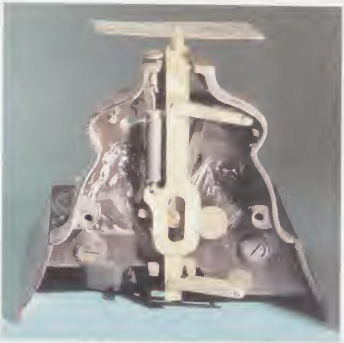


Figure 6. Patent number 166569 was issued to Turnbull on August 10, 1875 and was assigned to Landers, Frary & Clark. This scale has been found in two different case designs, one with an Angel and one with a Victorian design. The original patent shows the mechanism dependant on two flexure springs but a helical spring was employed in the example that was dissembled at right.



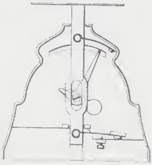
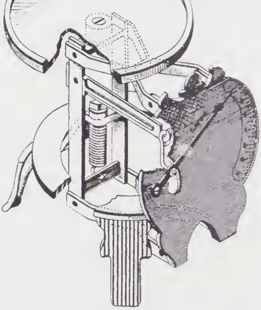


Figure 7. Patent number 193576 was issued to Turnbull on July 24, 1877 and was assigned to Landers, Frary & Clark. It was Turnbull's intention to make a family scale which was not dependant on a rack & pinion to turn the dial. Instead this scale had the dial hand mounted by a rod directlty to the vertically moving support.



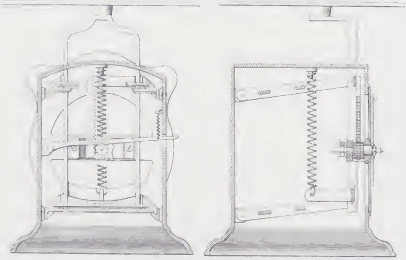
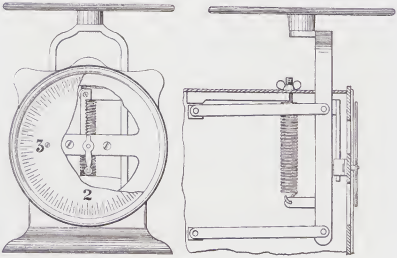


Figure 8. Patent number 289450, shown above, issued to Runge on December 4, 1883, is very similar to patent number 527427, shown at left, issued to Holtzhouser on October 16, 1894. The major differences are that Runge included a tare while Holtzhouser included an adjustment screw. The case, plate, dial and mechanisms are almost identical. The tare mechanisms are different and its interesting to note that both were granted patents less that 11 years apart. It is believed that the Turnbull scales, manufactured by Landers, Frary and Clark, are based on the later patent since Holtzhouser was from New Britain, Connecticut where the company was located.



Level Company and by 1893 he was working as a contractor in the same city. By 1902 Holtzhouser was a foreman for the national wire mattress company in Waterbury, Connecticut. Jacob P. Holtzhouser was granted at least ten patents for hardware between the years 1905 to 1918 and all were assigned to Stanley. The New Britain, Connecticut city directory from 1913-1915 lists Holtzhouser as an employee of the Stanley Works, the 1920 census of Essex, Connecticut, reports that he was a machinist working at Steel Spoke Works and the 1930 census of the same city reports that he was working at Witch Hazel Mill.

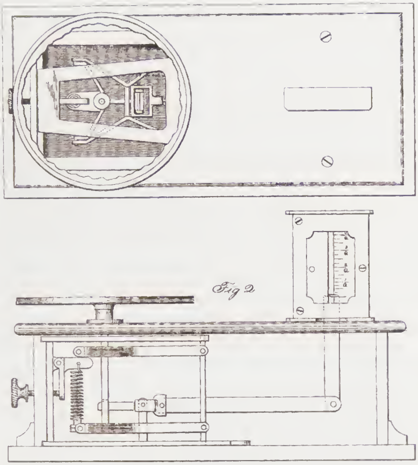


Figure 9. ▲ ▲ Patent number 322870 was issued to Turnbull on July 21, 1885. Half of the rights were assigned to William Felding. It is not known who produced this box scale for Turnbull and only one example is known to exist. This is a unique scale for weighing liquids by the quart or gallon.

James D. Frary was born on September 20, 1833 in Meriden, Connecticut and was married there on December 22, 1852. He can be found in the 1860 census working as a manufacturer in Meriden at age 26. By 1870 he had moved to New Britain Connecticut where he was a manufacturer with real estate worth $15,000 and a personal estate worth $55,000. The 1880 census shows him living in Bridgeport, Connecticut and working as a manufacturer.

George M. Landers was a hardware manufacturing pioneer in New Britain, Connecticut beginning the firm Dewey and Landers in 1842. The firm was dissolved in 1847 and Landers started a foundry and built a small hardware factory to continue the old business. He manufactured cupboard catches, furniture casters, coat and hat hooks, wardrobe hooks, hooks and eyes etc. In 1853 the business sold stock under the name Landers and Smith Manufacturing Company and had a capital of $30,000. The business grew and in 1862 bought the firm of Frary, Carey & Co. of Meriden and reorganized under the name of Landers, Frary and Clark. By 1875 the firm had a capital of $500,000 and employed 600 workers. Soon after, George Landers retired leaving the firm to his son Charles S. Landers.

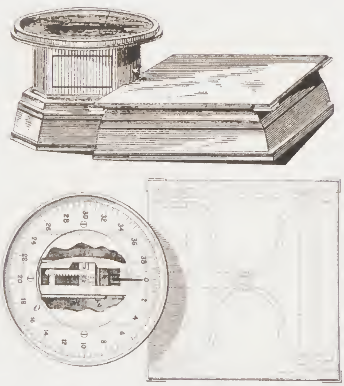


Figure 10. ▲ ▲ Patent number 378382 was issued to Turnbull on February 21, 1888 for a dial faced counter platform scale. The patent was unassigned and no scales have been found to date. It is interesting to notice that the style of this scale is similar to later bathroom scales.

Charles S. Landers was born in 1846 in Connecticut and by age 24, in 1870, was working for his father as a manufacturer with a personal estate of $10,000. He is listed in the 1900 census of New Britain Connecticut as a cutlery manufacturer but he died in October of 1900 leaving his estate to his wife Grace and his son George.

Landers, Frary and Clark is listed in the Hartford Connecticut 1871 directory as New Britain manufacturers. They are listed again in 1881 and 1887 in the New Britain city directory as follows: *Landers, Frary and Clark, hardware and table cutlery East Main and Center; Charles S. Landers treasurer, George M. Landers Vice President.*

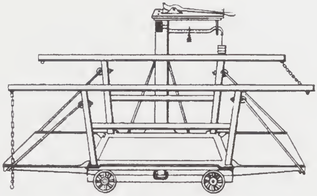


Figure 11. Patent number 413572 was issued on October 22, 1889 to James Steedman, & Thomas Partridge of Hamilton, Ontario, Canada and Andrew Turnbull of New Britain, Connecticut. It was assigned to the E. C. Gurney Co. of Canada. This invention was for a device to attach to an ordinary platform scale to give a larger platform surface for weighing livestock of all kinds.

Landers, Frary and Clark is a firm well-known by antique collectors. They had a huge factory in New Britain, Connecticut comprized of 8 buildings. The company made all types of kitchenware during the one-hundred plus years that they were in business and are best known for their cutlery and other items sold under the Universal name brand.

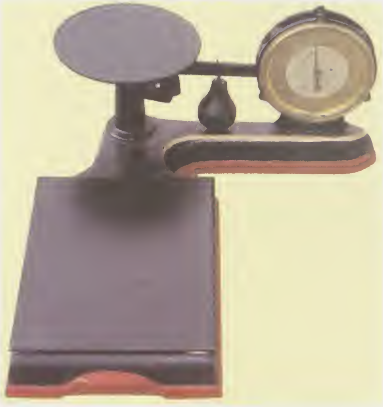


Figure 12. This is the largest scale signed by Turnbull. The inner dial has a capacity of 56 lbs and the outer dial has a 32 lb capacity. The center of the dial on this union scale reads as follows: *Turnbull's Patent Sept. 13, 1859. To weigh 32 lbs by ounces on the scoop.* The scoop would be placed on the round plate. The large platform measures $10^{3}/_{8}$"by $13^{3}/_{8}$", the small plate is $8^{5}/_{8}$" in diameter, the scale is 24" deep, 21" long, $11^{1}/_{2}$" high and the dial is 7" in diameter. The reason for the poise is unknown.

In the 1850s Landers brought out its first product designed particularly for the American housewife. It was a spring scale for weighing foodstuffs. In those days most groceries were purchased in bulk, measured out from barrels - sugar, tea, coffee, vegetables, cookies, crackers, cereals. Meat and cheese came in bulk and were cut to order. There were no package products with weights clearly marked. There was need in the home for a family scale to check the butcher and the grocer. There was a need for a scale to weigh quantities for preparation of meals. Family scales have been sold continuously to the American housewife ever since. But, today foods are packaged and the system of inspection of commercial scales is quite rigid. Thus, many homes now do not have the formally indispensable family scale, and our company dropped out of the business a number of years ago because of diminishing volume.[1]

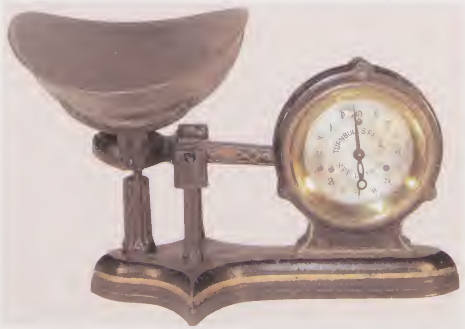
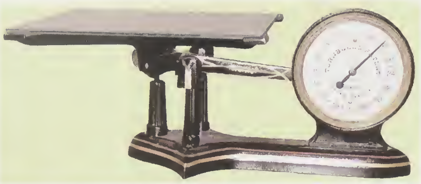
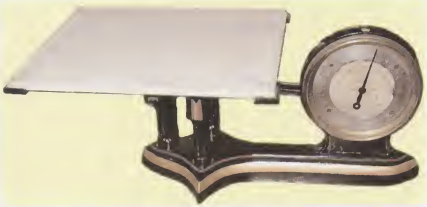
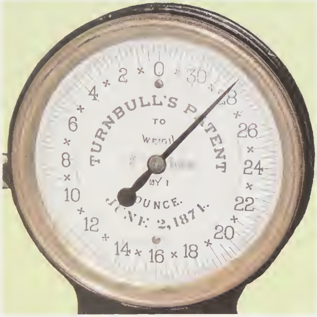


Figure 13. The 5" diameter nickle plated brass dial on this scale, like the early version shown in Figure 2, reads Turnbull's Patent Sept. 13, 1859. It has an 8 pound capacity and measures $13^{3}/_{4}$" long by $6^{7}/_{8}$" wide at the base.

It just so happened, that one scale inventor was located right in their own backyard. Andrew Turnbull, of New Britain, was a prolific inventor of interesting spring balance scales and most of his patents for scales were assigned to Landers, Frary and Clark.







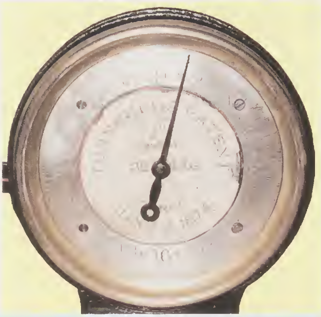
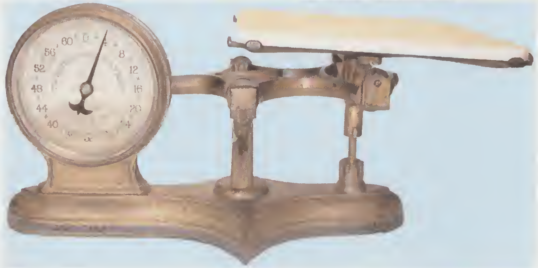


Figure 14 & 15 A & B. ▲◄▲► Both of these scales read *Turnbull's Patent to weigh 32 Lbs by 1 ounce* and have the reissue patent date June 2, 1874. This shows the two face styles featured on Turnbull's counter scales. All faces like the one shown left are paper while the faces like those shown on the right have paper centers and metal charts.

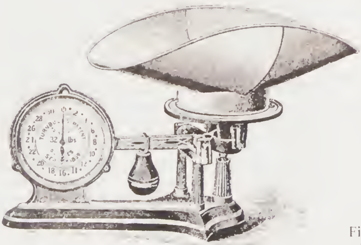
Figure 16. ▼▼ This Turnbull counter scale has a capacity of 64 pounds by 2 ounces. It measures 18½" long by 7¾" deep by 10⅛" tall with a 5¼" diameter dial.



The Patents

Patent number 25,473 was issued to Turnbull on September 13, 1859, when he was living in West Meriden, Connecticut (CT). It was assigned to himself and James Frary of Meriden, CT. The patent describes this scale as follows: *a new and improved weighing device, the same being a combination of what are generally known as the "spring balance" and the "counter scales." The invention consists in combining a spring balance with the beam lever and scoop platform.* A spring, connected to the beam-lever, operated a rack and pinion which moved the hand around the dial when a load was applied. This patent was reissued to Turnbull, now living in New Britain, CT, as number RE5901 on June 2, 1874, and the reissue was assigned to Landers, Frary and Clark of New Britain, CT. These two patent dates were referenced more than any other patent, on Turnbull scales. This is evidenced by the fact that almost every Turnbull scale has a patent date on its face and several scale configurations or styles have been found bearing these two patent dates[2].

MARKET SCALES.



NO. 32 WITH SCOOP

Figure 17. ◄◄ This advertisement showing the 32 pound Turnbull Market Scale, with a poise, appeared in an 1890s Union Hardware & Metal Co. Catalog with a price of $16.00. The only Turnbull scale known to have the poise is shown in Figure 12.

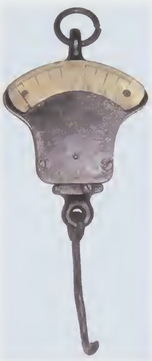


Figure 18. This 100 pound capacity hanging scale has no makers name but is identical to Turnbulls patent drawings. It measures 12" long and 4$^{7}/_{8}$" at its widest point. See EQM pg.2747.

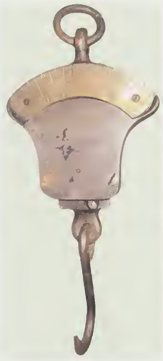


Figure 19. This 200 pound capacity hanging scale is the exact same size as the 100 pound capacity scale in figure 17.

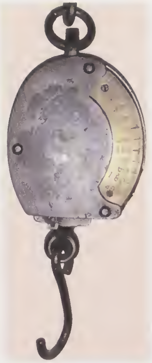


Figure 20. This 200 pound capacity hanging scale measures 12" long by 4$^{3}/_{8}$" wide. Even though it is unmarked, the similarities in construction to the scales in Figures 17 & 18 are indisputable.

The first scale patent utilized by Landers, Frary and Clark for their family scales was a patent by Jean Victor Mathivet of Cleveland, Ohio. Patent number 107,272 was issued on September 13, 1870, for a family scale with a Victorian style, ornate tripod base. While Mathivet held the patent most of these scale found today bear Turnbull's name. They read as follows: *Turnbull's Family Scale To Weigh 8 lbs. By ½ Oz.* or *Turnbull's Family Scale To Weigh 16 lbs. By ½ Oz.* Questions remain as to whether Turnbull or Landers, Frary and Clark bought Mathivet's patent rights, but it is interesting that a scale identical to this was seen by the author, in the late 1970s, bearing a Chatillon brand[3].

Turnbull patent no. 152195 was for a hanging spring scale and was issued on June 16, 1874. While two examples of this scale are known to the author, neither has any marking attributing it to any maker. However, it is known that patents issued to Turnbull both before and after place him in New Britain where Landers, Frary and Clark were located and those patents as well as this one were assigned to the firm. This scale is a spring balance with

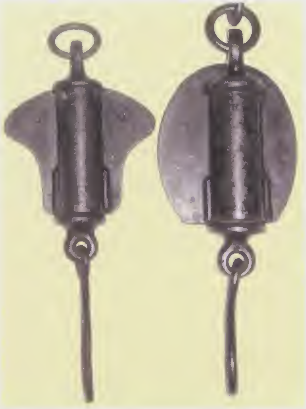


Figure 21. This shows the backs of the Turnbull on the left and the scale shown in Figure19 above. The similarities in construction are very convincing making it evident, even to a novice, that they were based on the same patent.

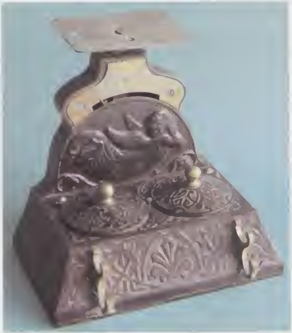


Figure 22. There are two different case designs for this Turnbull scale with ink wells and pen holders. This one has an angel cast into its front. Note the case differences in this and figure 23. Capacity is 8 ounces.

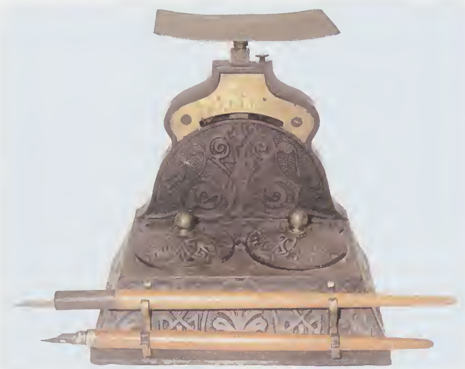


Figure 23. Like most of Turnbull's scales this one is made from cast iron and brass. The inkwell lids pivot on a brass pin to open. This scale is also equipped with an adjustment screw just under the letter plate at right. It is 6$^1/_4$" tall.

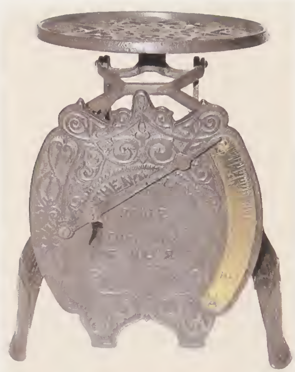
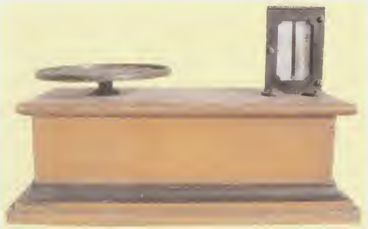


Figure 24. The casting on Turnbull's family scale is similar to that on the postal shown in Figure 22. The scale measures 7$^7/_8$" tall with a 5$^1/_2$" dia. plate.

a quadrant dial. One example is graduated from 0 to 100 by pounds while the other is graduated from 0 to 200. Another spring balance has been found, by the author, that is believed to utilize this patent. It is oblong shaped and graduated from 0 to 200 by 2 pounds. Compare the scales in Figures 18, 19, 20 and 21 and decide for yourself[4].



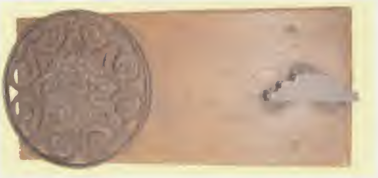
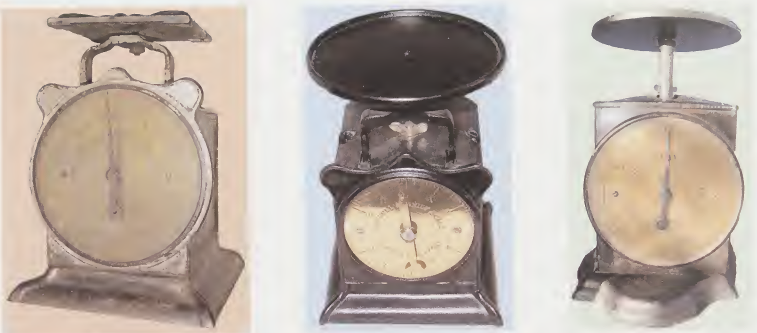


Figure 26. Top view showing filigreed plate identical to that on Turnbull's family scale shown in Figure 24.

Figures 25 & 27. This is the only example known of Turnbull's patent number 322870. It is a wooden box scale with an upright dial which weighs by cup up to one gallon of liquid. The box measures 13" long, 6$^1/_8$" wide and the vertical dial is 4$^1/_2$" high. There is a knob on the side which allows the tension to be adjusted so that it is fairly accurate.

Patent number 166569 was issued to Turnbull on August 10, 1875 for a letter scale with 2 ink wells and a pen rack in its base. Two case designs of this scale have been found. The patent shows the use of 2 flexure springs, one at the top and one at the bottom of the post but at least one known example utilizes a helical spring instead[5].

A family scale patent number 193576 was issued to Turnbull on July 24, 1877. Like Mathivet's earlier patent, it had a tripod base. The top plate on these scales is made from filigreed cast iron and the face and leg supports are orna-



Figures 28, 29, 30. The scales at left and center and are made using Holtzhouser or Runge's patent. The scale at right, while stating Turnbull's Family Scale, does not resemble the patent nor the majority of Turnbull Family Scales. Capacity of the scale at right is 24 pounds while the other Turnbull's have a 12 pound capacity.

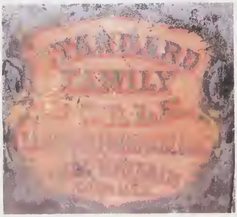


Figure 31. This advertising decal was affixed to the back of the scale shown in figure 29, leaving no doubt as to who the maker was.

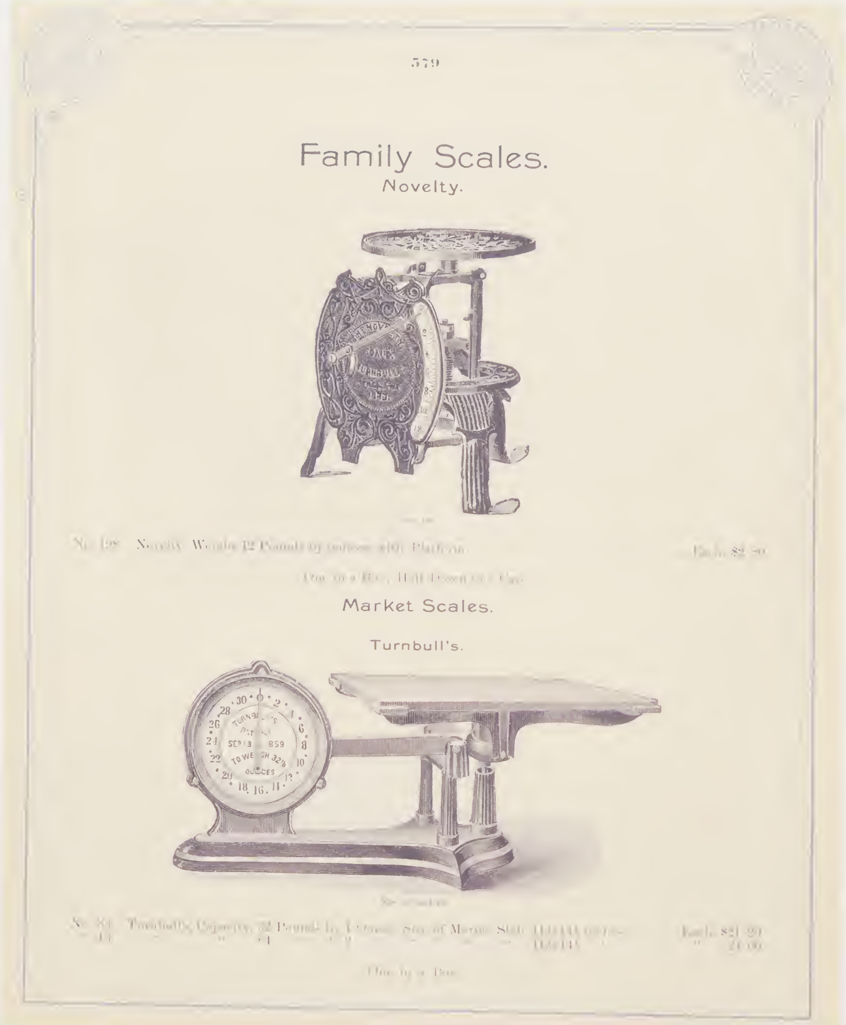
mented with a design typical of late American Victorian style. The quadrant dial on these scales is graduated from 0 to 12 by 2 ounces. The face reads as follows: "The Novelty Scale Turnbull's Pat July 24TH 1877."[6]

The most unusual scale patented by Turnbull was issued patent number 322870 on July 21, 1885. It is for a cased platform scale with an upright indicator. This scale has a helical spring which is employed as a resistant when a load is placed on the scale plate. The plate on this scale is identical to the plate on Turnbull's Novelty scale. The scale is *specially designed for weighing liquids. The object of the invention being a simple and cheap construction adapted to set up on a counter and upon which a measure containing liquid may be readily set and the weight of its contents determined.* The upright indicator's graduations are as follows: 1Q, 2Q, 3Q and 1G[7]. [Four quarts equal one gallon.]

A counter-top platform scale patent number 378382, was issued to Turnbull on February 21, 1888. Although it was not assigned to any firm, Charles S. Landers was one of the witnesses who signed the text, and it might be assumed that, if it was produced, his firm was the manufacturer. This scale had a round dial that the user viewed from above. No examples have been found by the author (see figure10).

Jacob Holtzhouser of New Britain, CT was issued patent number 527427 on October 16, 1894 for a Family Scale. Eleven years earlier Frederick Runge was issued patent number 289450, on December 4, 1883, for an almost identical Family Scale. It is unknown which of these scale patents was used by Landers, Frary and Clark but this scale has been found in two different capacities, each bearing the Turnbull name on its face. These scales have a red decal affixed to their back reading as follows: Standard Family Scale, Landers, Frary & Clark, New Britain, Conn, U.S.A[8].

Patent number 413572 was issued on October 22, 1889 to James Steedman, & Thomas Partridge of Hamilton, Ontario, Canada and Andrew Turnbull of New Britain, Connecticut. It was assigned to the E. C. Gurney Co. of Canada. This invention was for a device to attach to an ordinary platform scale to give a larger platform surface for weighing livestock of all kinds (see figure 11).



579

Family Scales.

Novelty.

No. 198. Novelty. Weighs 12 Pounds by Ounces, with Platform . . . . . Each, $2 50

One in a Box, Half Dozen in a Case.

Market Scales.

Turnbull's.

No. 84. Turnbull's, Capacity, 32 Pounds by Ounces; Size of Marble Slab, [illegible] . . . . . Each, $21 20
" [illegible] " " 64 " " [illegible] " 24 00

One in a Box.

Figure 32. ⅄.⅄. This advertisement for Turnbull scales was found in an 1894 Lee-Clarke-Andreesen Hardware Company catalog. Lee-Clark-Andreesen Hardware was located in Omaha, Nebraska during the years 1891-1905.

Proof

Turnbull scales were sold in varying capacities and styles by several different companies. Evidence of this is found in 1890s advertisements and catalogs from Montgomery Ward, Sears Roebuck, Lee-Clark-Andreesen Hardware, Simmons Hardware, Union Hardware and Metal and William Frankfurth Hardware.

Some Turnbull's family scales based on patent number 527427 have been found with red labels(see figure 31) on their backs. In addition, boxes have been found with labels stating that Turnbull's scales were made by Landers, Frary and Clark.

Notes & References

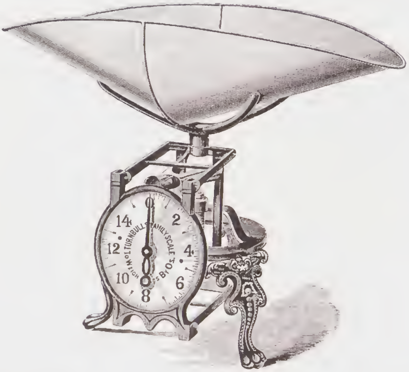
1. White, Richard L. *A Century of Inventions for the American Home!* The Newcomen Society in North America. 1955 Connecticut Luncheon. Skippers' Dock, Noank, Connecticut. 12 Aug. 1955.
2. See figures 1, 2, 3, 12, 13, 14, 15, 16 & 17.
3. See figure 4.
4. See figures 5, 18, 19, 20, & 21.
5. See figures 6, 22 & 23.
6. See figures 7 & 24.
7. See figures 9, 25, 26 & 27.
8. See figures 8, 28, 29 & 30.

Acknowledgements

1. The author wishes to thank Steve Beare for his extensive genealogy research necessary to complete this article.

2. The author wishes to thank the following for use of their scales in completeing this article: John Cattle collection, Diana Crawforth-Hitchins, Jim Dietrich, Kim Janda, Bob Jibben, Lorraine Mabbett, Larry Pugsley, Les Schneiderman, & Phil Wehman.

TURNBULL'S FAMILY SCALES.


TURNBULL'S FAMILY SCALE TO WEIGH 16 lbs BY OZ
0
2
4
6
8
10
12
14

No. 56

No. 53.— 8 lbs. Scale with Platform.	per dozen, $30 00
No. 54.— 8 " " 15 inch Tin Scoop.	" 33 00
No. 55.—16 " " with Platform.	" 33 00
No. 56.—16 " " 18 inch Tin Scoop.	" 36 00

Figure 33. ➶➶ This ad from the late 1800s features Turnbull's Family Scale and shows the capacities & types available for sale at William Frankfurth Hardware Co in Milwaukee, Wisconsin.

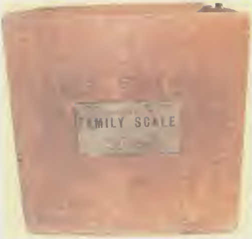
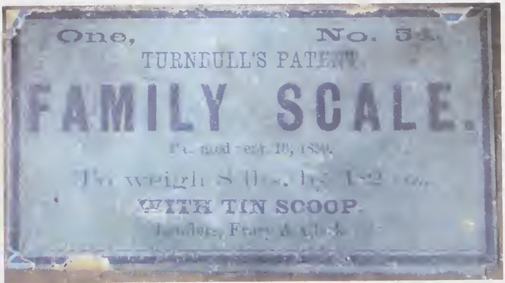


Figure 34. ➶➶ Original box containing advertized scale shown in figure 33. The box measures 7¼" square by 7¼" high and is made of pine wood. It originally had a sliding wooden lid which is missing.



One, No. 54.

TURNBULL'S PATENT

FAMILY SCALE.

Patented Sept. 13, 1859.

To weigh 8 lbs. by 1-2 oz.

WITH TIN SCOOP.

Landers, Frary & Clark.

Figure 35. ➶➶ Close-up of green label affixed to original box shows a patent date of Sept. 13, 1859, which is incorrect for model No. 54 shown in figure 33. It also shows the maker to be Landers, Frary & Clark.

Treasures from the Mall

BY KURT BEYREIS

Like everyone else, I complain that that there aren't any decent scales and weights at the antique malls anymore. However several months ago I saw the weight shown below, in figure 1, peeking out from under an antique bed in a messy corner of a mall near our house.

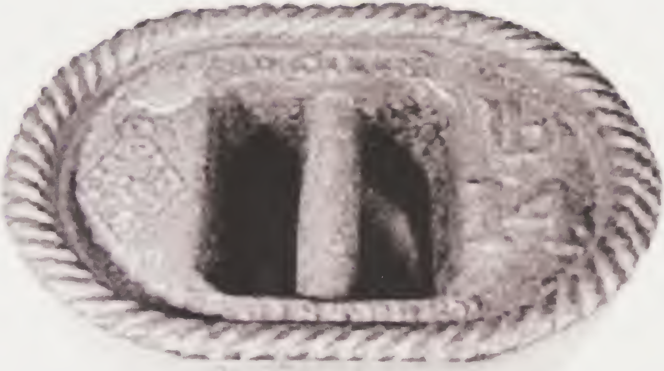


Figure 1.

It didn't have a price on it so I took it up to the desk and asked how much the dealer wanted for it. The lady called the dealer and described it as a "horse weight" (Something to tie the horse to so it would not wander away!). I kept my mouth shut. When the dealer gave a price, we dickered a bit and finally agreed on a very nominal figure. When I first picked it up I knew it was an old English 14 lb. weight with a pie crust design. I had seen pictures but didn't have one and I had heard that not many of these weights survived to the present day. I hurried home to see what I could find out about it.

Examining the Weight

The weight is cast iron with a handle to lift it up.

The markings are as follows:

- 14 lb
- D. Green
- Registered
- A Diamond Shaped Mark (all in figure 2.)
- A Slot on the bottom to add in lead to certify it with what looked like either a VR or ER crown and a 2/20 mark(see figure 3).

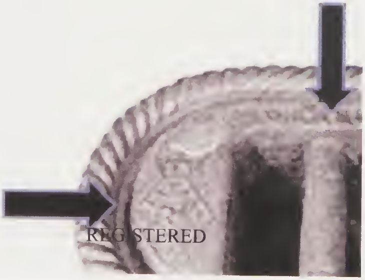


Figure 2.

Dating the Weight

John and David Green set up the Coseley Foundry around 1820. Their early weights bore the name I & D Green, but starting about 1845 onwards the firm was known as D. Green & Co although the dates for D Green (found in trade directories) bracket 1828-1854. On 1 August 1847, the D. Green firm registered a design for oval-shaped iron weights with a 'pie-crust' edge. This is consistent with the diamond registration mark found on the weight shown in figure 1. During the years between 1842 and 1883, designs registered at the Patent Office Design Registry could bear a registration mark, giving the details of the registration. After 1883, designs were issued with only a registration number.

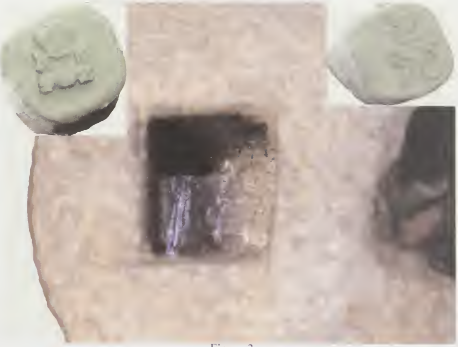


Figure 3

Unfortunately, there are several verification marks inside the slot on the bottom of the weight that are unable to be read. The ones I can read are probably not the earliest ones but rather the latest ones so they may not help in dating the weight. We made impressions with modeling clay to be able to read the marks. As shown in figure 3, the 552 mark indicates Norfolk County. The design of the crown appears to be similar to the ones used for Victoria (1837-1901) and Edward VII (1901-1928) in Norfolk County. The Monarch letter is difficult to decipher but seems to be an E rather than V. Finally, the 2/20 mark could be a date (February, 1920) when the weight was last certified/inspected or may not be related to the Norfolk County mark or may have been added at a later time. The use of a number rather than a letter to show the month is not totally consistent with the method seen to be used at that time. However, taking into account all of the above information and given that weight was registered in 1847 and that the D GREEN name was only used until 1854, I concluded that weight was produced between 1847 and 1854 which is a very short time bracket for this kind of weight.

With Ebay and the internet there just aren't many bargains or underpriced antiques anymore, but if you keep looking in the dusty corners of the antique malls, once in a while you just might find a treasure - or if not a treasure, at least something interesting that you don't have in your collection.

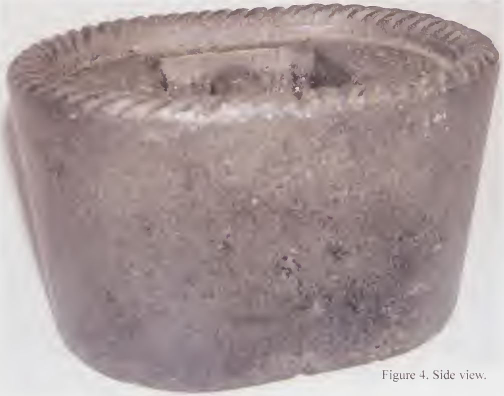


Figure 4. Side view.

Acknowledgements

Special thanks to Diana Crawforth-Hitchins for her input.

Weights for Accepting Foreign Gold Coin

BY JEROME KATZ

Some time ago I was offered and bought a set of weights. This consisted of six round, tapered brass weights plus three sheet brass fractional wafer weights. The major weights are stamped respectively: F&S Dollars 10, F&S Dollars 5, F&S Dollars 4, FS Dollars 3, FS Dollars 2, FS Dollars 1. Note: The three smallest of these weights did not have an & between F and S, probably because of space limitations. The wafers are marked respectively: F & S Cents 40, F & S Cents 30, F & S Cents 20. This year the Bernings bought more of these weights on Ebay and found one in Phil Wehman's collection.

What were these weights for? Who was the maker, F & S?

The weights of these were determined to be:

Denomination	Weight in Grams	Weight in Grains*
Katz Weights Found 2002		
F & S Dollars 10	17.8	274.7
F & S Dollars 5	8.9	137.3
F & S Dollars 4	7.1	109.6
F S Dollars 3	5.4	83.3
F S Dollars 2	3.6	55.6
F S Dollars 1	1.8	27.8
F & S Cents 40		
F & S Cents 30		
F & S Cents 20		
Berning Weights Found 2008		
F & S Dollars 5	8.88	137.0
F & S Dollars 4	7.1	109.6
F & S Dollars 3	5.31	81.9
F & S Dollars 2	3.54	54.6
F & S Dollars 1	1.78	27.5
F S Cents 50	.88	13.5
F S Cents 40	.71	10.9
F S Cents 30	.52	8.0
US Dollars 5	8.75	135.0
US Dollars 4	7	108.0
US Dollars S (3)	5.25	81.0
US Dollars 2	3.5	54.0
US Dollars 1	1.74	26.9
US Cents 50	.86	13.3
US Cents 40	.70	10.8
US Cents 30	.52	8.0
Cents 20	.34	5.2
Wehman Weight Found 2008		
F Dollars 100	177.5	2739.2

*Grain weights were obtained by using a conversion of 15.432 grains per gram.

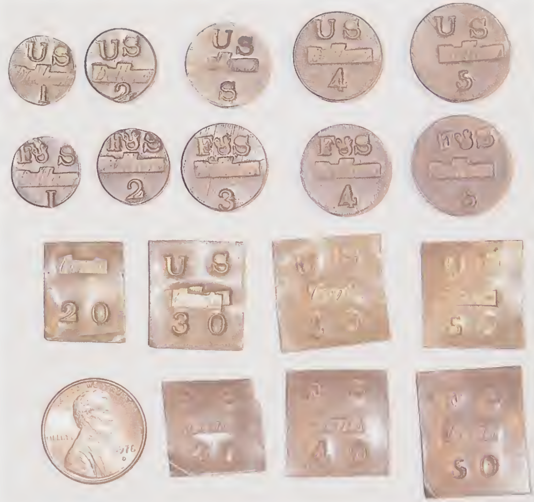


Fig. 1. Berning's weights. US weights are made of brass and F & S weights are of copper or bronze.

These results just do not correspond with the weight of US gold coins.

Further investigation revealed the following bit of Americana.

By the Act of February 9, 1793, the US passed a law regulating foreign coin and provided that after July 1, 1793 foreign coin for three years should pass as money within the United States as legal tender at specified rates. The Act was renewed several times so as to expire April 10, 1809. It provided: *Of gold coins of France, Spain and the dominions of Spain of their present standard, at rate of one hundred cents for every twenty seven grains and two fifths of a grain of the actual weight thereof.*

With a bit of quick arithmetic and the use of the rate from the law cited above (100 cents per $27^{2}/_{5}$ grains) one concludes (the results are awfully convincing) that these weights were most likely used by banks or dealers for buying normal, worn, filed or clipped gold coin of any denomination and directly know their value in dollars.

Furthermore, "F & S" were not makers at all. "F & S" now convincingly denotes "France and Spain."

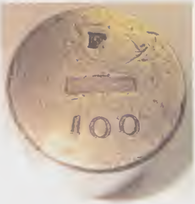


Fig. 2. Wehman's F Dollars 100 brass weight.

Summation:

These weights were used circa early 19th century to redeem French and Spanish gold coins in circulation in the Colonies, payable in dollars.

Acknowledgements
The author wishes to thank Eric Newman for his help in preparing this article.

Note: See EQM pages 2402 and 2445.

Oakes Manufacturing & Their Egg Scales

BY CHARLIE AMSBAUGH

The Oakes Manufacturing Company, whose name we see embossed on both horizontal egg graders and vertical egg scales, started business as the L.R. Oakes Company in Bloomington, Indiana, in 1892. The company changed its name to the Oakes Mfg. Co. sometime between 1898 and 1903, and incorporated as the Oakes Mfg. Co., Inc., in the second half of 1903. The company moved to Tipton, Indiana, about 1912 and stayed in that same location over the years, adding more buildings at the Tipton Plant, and adding a second plant at Crawfordsville, Indiana, as the business grew.

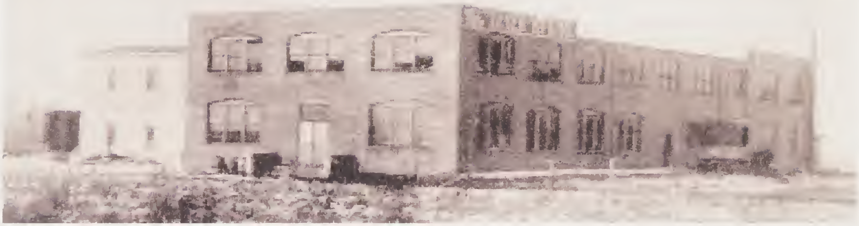


Figure 1. Oakes Mfg Co, Tipton, Indiana 1917.

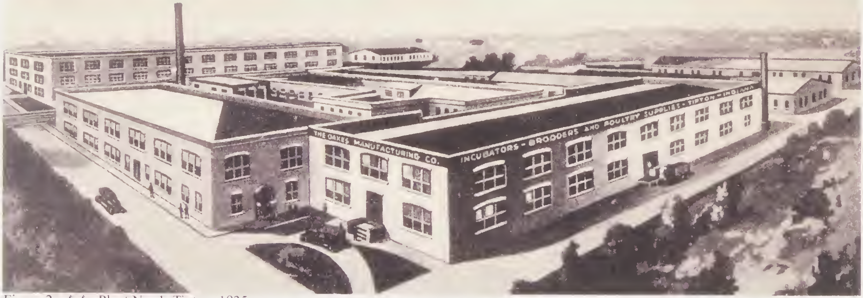

THE OAKES MANUFACTURING CO.
INCUBATORS - BROODERS AND POULTRY SUPPLIES - TIPTON - INDIANA

Figure 2. Plant No. 1, Tipton, 1935.

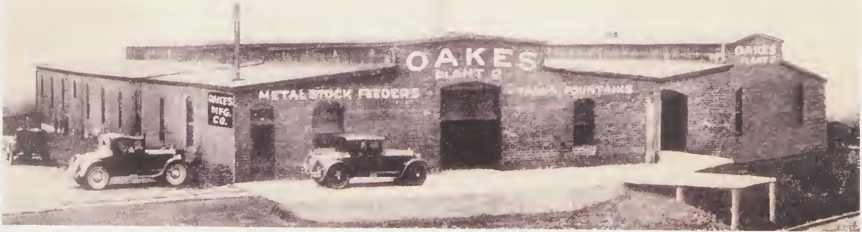


Figure 3. Plant No. 2, Crawfordsville, Indiana 1935.

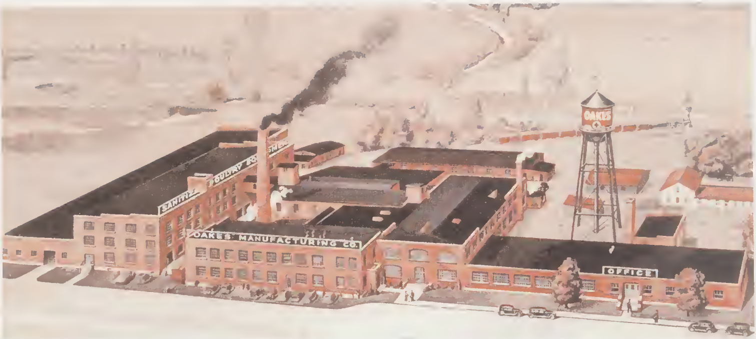


Figure 4. Oakes Mfg. Co. Inc., Tipton, Indiana, 1939-1949.

The Oakes Mfg. Co., Inc. was bought by the Food Machinery and Chemical Corporation (FMC) in 1952. FMC was apparently interested in Oakes Mfg. for its line of sprayers and poultry equipment, such as brooders, feeders, waterers, nests, and egg scales, graders and candlers.

FMC was faced with a labor dispute in the early 1960s over retirement for older workers. The older employees wanted retirement benefits and the younger workers wanted better pay and job security. According to the family of a former FMC employee, the company wasn't willing to do both, so they had an employee vote and the poultry equipment operation was shut down. The latest information available on Oakes products is dated 1962. As a result, it would appear that the poultry equipment operation was shut down in either 1962 or 1963.

Oakes Mfg made a series of horizontal egg graders first, followed by a three-generation series of vertical egg scales. The earlier vertical Oakes Egg Scale models were nearly identical to the tin Mascot Egg Scales made by the Prospectus Manufacturing Company of Minneapolis, Minnesota, except that the Mascot had a round hole in the vertical upright.

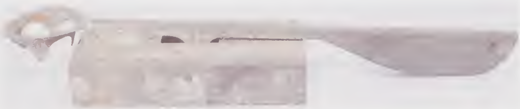


Figure 5. Oakes D-53 Single Weight Egg Grader

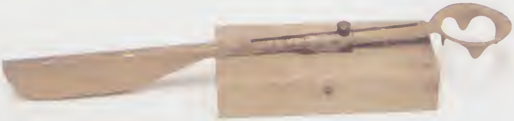


Figure 6. Oakes D-54 Adjustable Egg Grader

1926-1932

The first egg graders made by Oakes Mfg. were the horizontal Oakes model D-53 Single Weight Egg Grader (fig.5) and the D-54 Adjustable Egg Grader (fig. 6), manufactured from 1926 through 1932. These early square-bottomed egg graders were painted gray and were embossed with "OAKES PAT. AP. FOR." Their bases measured 5$\frac{5}{8}$" long by 2$\frac{1}{2}$" wide. The balance beam and egg cup together measured 12$\frac{5}{8}$" long. The D-53 Single-Weight model was available in the 22 oz. per doz. size only, which was the accepted minimum weight for a hatching egg at the time. The D-54 model, which had an adjustable slide weight, was available in two weight ranges, either 18, 20, 22, 23, 24, and 26 oz. per doz., or 19, 20, 21, 22, 23, 24, and 26 oz. per doz..

1933

By 1933, the American poultry industry had changed the minimum weight for hatching eggs from 22 to 23 oz. per doz. As a result, Oakes Mfg. had to change their single-weight egg grader to the higher weight. While they were at it, they redesigned the base so the sides were arched on the bottom and there was a curved cut-out at the egg cup end. They painted their redesigned single-weight egg grader a bright red and marketed it as the Oakes Model E-53 Egg Grader (figure 7). The Oakes E-53 sold for 30 cents apiece in 1935, 45 cents apiece in 1942. It was discontinued in 1943.

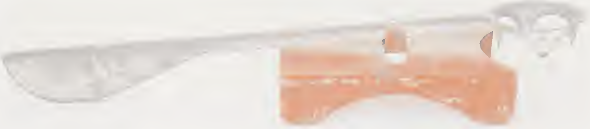


Figure 7. Oakes E-53 Single Weight Egg Grader.

At the same time, Oakes upgraded their adjustable egg grader with the same newly designed red base arched on the bottom, but without the cut-out for the egg cradle, and began selling it as Model 555. “MADE BY THE OAKES MFG, TIPTON, IND.” was stamped into the front top portion of the base. The red-colored Model 555 Adjustable Egg Grader (figure 8) continued to be carried in Oakes catalogs through at least 1957, and probably until the poultry line was shut down in about 1962. They also sold an unpainted, galvanized model #555, (figure 9).

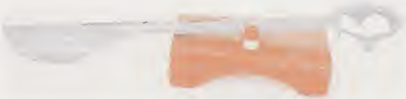


Figure 8. Oakes #555 Adjustable Egg Grader with Red Base.

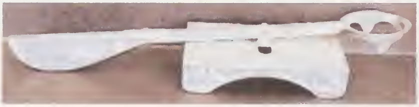


Figure 9. Oakes #555 Adjustable Egg Grader (Galvanized).

1934 – Here Come the Verticals

Oakes Mfg. began selling vertical egg scales in 1934. The Oakes catalog for 1934 showed the first vertical Oakes Egg Scale, the Oakes Model 20 (figure 10), as having a red base, red vertical upright, black scale face with silver lettering, an egg cup and scale mechanism made of chromium-plated tin, with a lead counterweight threaded onto the end of a steel rod. Its base measured 6$^{1}/_{4}$” long by 3$^{1}/_{4}$” wide. The scale measured 6$^{1}/_{4}$” high. The Oakes Model 20-S (figure 11) was identical to the Model 20, but with an adjustable stop immediately under the lever, which converted the scale into a grader. The stop could be set to stop at any weight. The red-colored Oakes Model 20/20S Egg Scale sold from $1.35 in 1935 to $1.50 in 1946, and was distributed with either the manufacturer’s decal attached to the base or an advertising decal for another company, such as Cyclone or Starline, attached to the upright portion of the scale. The manufacturer’s decal, which reads “OAKES Sanitized EQUIPMENT FOR EVERY POULTRY NEED. The Oakes Mfg. Co., Inc., Tipton, Ind., U.S.A.” attached to the base was made of paper and often disappeared over time, leaving the egg scale with no manufacturer’s markings to identify it.

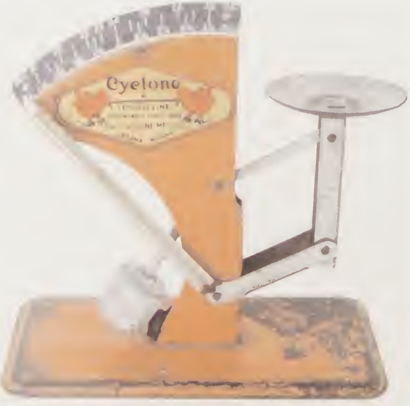


Figure 10. Oakes Model 20 with Cyclone Mfg. Co. Advertising Decal Attached and Painted the Cyclone Mfg. Co. Trademark Color, Orange.

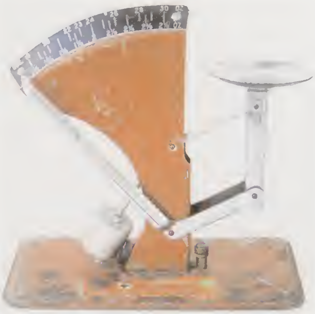


Figure 11. Oakes Model 20S with Oakes Decal (note adjustment stop under the lever).

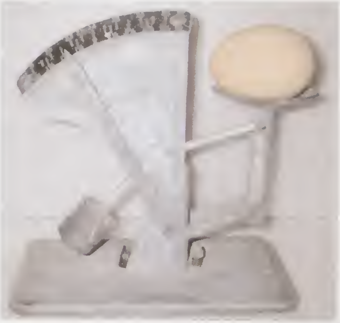


Figure 12. Oakes Model 20S Galvanized Egg Scale (note adustment stop under the lever).

Galvanized Version

Oakes' galvanized version of the Model 20/20S (figure 12) egg scale came next. It was nearly identical to the red one, with three notable exceptions: (1) it was made almost entirely of galvanized metal, (2) the counterweight was made of steel, not lead, and (3) "OAKES MFG. CO. INC., TIPTON, IND. NO. 20 (20S)" was stamped into the upper portion of the upright. The black scale face with silver letters is the same as used on the earlier red model. Both the earlier red scale and the later galvanized one were marketed as Oakes Model 20, or Oakes Model 20S. The use of steel for the counterweight and galvanized metal instead of tin suggests production on this model possibly began at the end of World War II, when such materials again became plentiful.

Multicolored Version

Oakes Mfg. introduced the multicolored Oakes Egg Scale No. 120 (figure 13 in 1949, shortly before the company was bought out by FMC. As you can see, this egg scale is marked to indicate the weight of each egg by its individual weight, by a color code, by weight per dozen eggs of the same average weight, or by grade, where the minimum weight of eggs by grade would be: Small = 1½ oz per egg, color red, or 18 oz per doz., Medium = 1¾ oz each, color blue, or 21 oz per doz., Large = 2 oz each, color yellow, or 24 oz per doz., and Extra-Large = 2¼ oz each, color green, or 27 oz per doz. Model 120 continued to be carried in Oakes catalogs through at least 1957, and probably until the poultry line was shut down in about 1962. It was selling for $1.50 in 1949 and for $2.35 in 1957.

Acknowledgements

My sincere appreciation to Michael Mason, owner of the Mason Hatchery in southwest Oklahoma, for all his help and encouragement with this article.

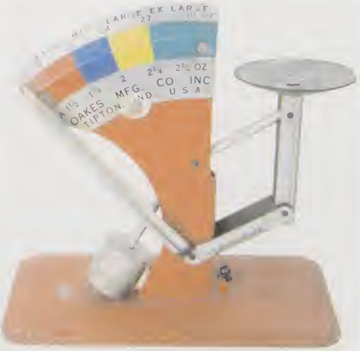
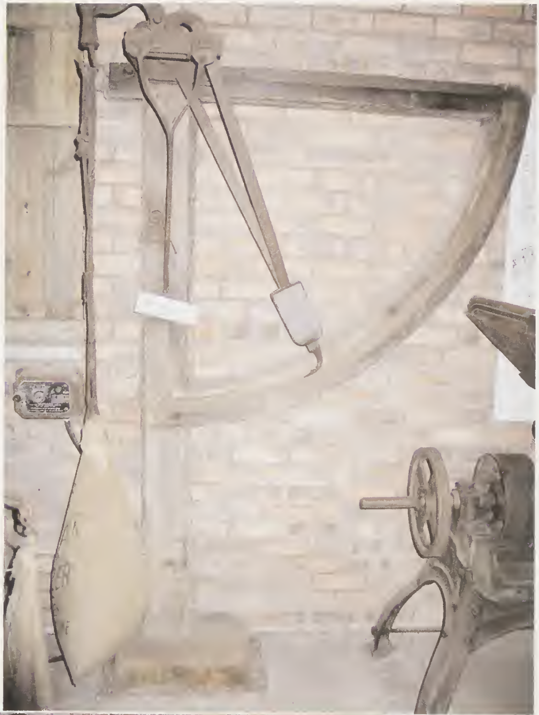


Figure 13. Oakes Multicolored Egg Scale, Model 120.

You Never Know Where You Will Find an Interesting Scale!!!

BY PETER LAYCOCK

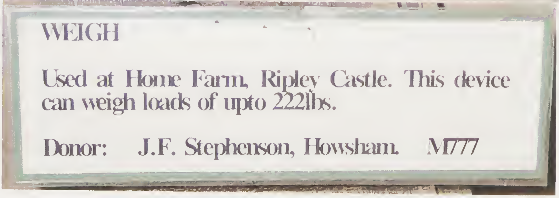
On a recent visit to the United Kingdom Dian and I travelled to visit my cousin, John Sawkill of Stamford Bridge, Yorkshire. One evening, over a glass of scotch, I happened to mention that I was an avid scale collector and that I was involved with ISASC. He was unaware that there were actually people who collected scales. He then went on to tell me that he was on the board of Murton Park, the home of the Yorkshire Museum of Farming and that he had recalled seeing a very old farm scale on display there that he thought I might be interested in seeing.



Less than fifteen minutes from his home we arrived at this wonderful country museum that was bustling with students and teachers participating in a number of educational activities that the museum hosted. Among their many attractions are two museum buildings filled with antique farming equipment and implements. Two thirds of the way through the second building we came across a most interesting and remarkable old pendulum farm scale. I took a few pictures so that I could do some cursory research when I arrived home.

A sign attached to the scale indicated that it had been used as a farm scale at Ripley Castle. It had been donated by Mister J. F. Stephenson, the founder of the museum.

I was delighted, never before had I seen a large pendulum farm scale. By its appearance it had been well used over a long period of time.

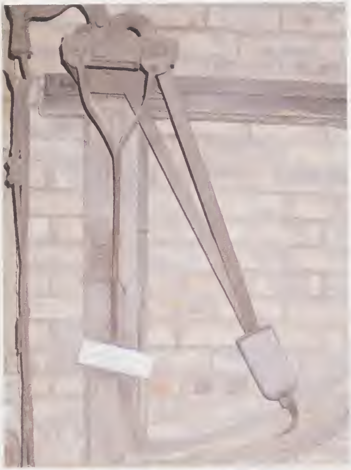


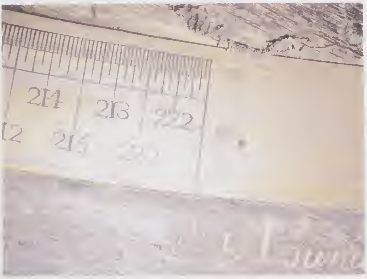
WEIGH

Used at Home Farm, Ripley Castle. This device can weigh loads of upto 222lbs.

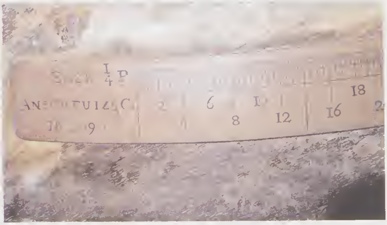
Donor: J.F. Stephenson, Howsham. M777

The basic frame of the scale is made from a hard wood, the mechanical works all appear to be made of iron that show considerable rust and wear. The poise appears to be a large piece of lead.





The curved scale is made of brass and is graduated in quarter pound increments up to 224 pounds (I suppose equivalent to sixteen stone).



On the leading edge of the scale is the designation of weight increments, the maker's name and a serial number (Anscheutz & Co. NO 2090).

Items that are weighed are placed on an iron hook that is attached to a sturdy piece of rope.

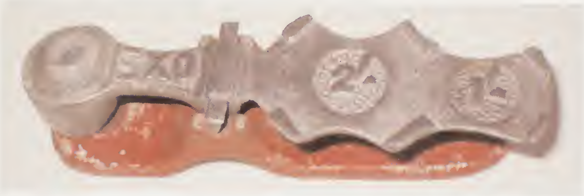
I found several references to Anscheutz in the EQM Index. There are one or two articles on small desk size pendulum scales but no reference to large scales. I sent off the pictures to Diana Crawforth- Hitchins. Diana reported that she had never seen any reference to large farm scales produced by this maker but did provide other historical information on Anscheutz.

If any of the ISASC members have additional information on this farm scale I would be pleased to hear from them. The Murton Museum is definitely worth a visit; their web site is www.murtonpark.co.uk. My thanks to my cousin John for having a keen eye and offering to take me out to see this most interesting scale.

Notes & Queries

N & Q No. 158

FROM VERNON DENFORD



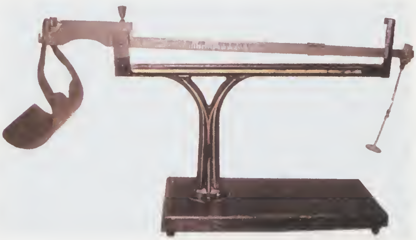
I have an aluminium coin rocker for the 2 shillings and 1 shilling silver coins. The makers name is EXO but I have no knowledge of when and where made. Dimensions for this rocker:- base is 98 mm long by 23 mm wide The arm is 103 mm long and 27 mm wide. Overall height combined is 24mm.

Can any member help Vernon?

N & Q No. 159

FROM BOB STRAY

I have an unusal Troemner scale. I have no idea what it was used for or how old it is. It is brass and iron. Hope you can help me.



Your scale is described in the 1926 Henry Troemner catalog as follows: *Yarn Cut Balance, Number 948. "Yarn Scale Balance" for ascertaining without calculations the counts of cotton, woolen ("cut" and "run" basis) or worsted yarns, using a different graduation of the scale beam for each kind of yarn quoted, so as to comply with their standards of grading as to count or number.*

The construction and working of this scale balanced with one example, based on "testing of woolen yarns spun by the 'Cut' System," and which example will at the same time explain the handling of other kind of yarns, using then with each kind of yarn a special graduated scale-beam, to conform with the standard number of yards used in grading the counts of the kind of yarn to be tested.

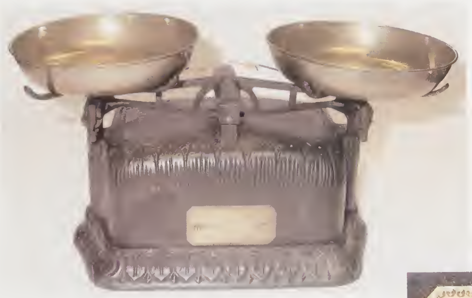
The scale-beam of this balance is graduated to indicate woolen yarns by the "cut" numbers (from 5 cut to 40 cut) representing the bulk of woolen yarn used by the textile industry in Philadelphia, New York State, etc. The graduations of the heavier counts (from 5 up) are sub-divided into quarters.

The length of yarn used for testing these woolen yarns is 50 yards, and which after a careful reeling are placed on the pan of the scale. Heavy counts of yarn require the sliding poise operated more toward the end of the scale-beam and where the graduations for these heavy counts (5, 6, 7, etc.) are located. The graduation for the lighter or i. c., higher counts of yarns, are on the other end of the scale-beam, and where they read from 40s down. By using this scale the spinner can at once detect any variation in counts and correct them in his work.

Although this balance has its scale-beam graded by the cut (wool) system, provided the case should come up to test by this balance the counts or numbers of other yarns, this can be done by means of calculations, i. c., taking the standard of the cut system (300) and this standard of the other yarn to be tested into consideration.

New England does not use the 'cut' system but uses the 'run' basis.
Cut System-Run System (or 300 to 1600)
For example, the sliding poise balanced on 40 cut mark.
Then 40 x 300 = 12,000 divided by 1600 = 7 1/2 run.
Cut System-Cotton Yarn (or 300 to 840)
For example, the sliding poise balanced (as before) on the 40 cut mark.
Then 40 x 300 = 12,000 divided by 840 = 14.28, or practically 14 1/4's cotton yarn
Cut System-Worsted Yarn (or 300 to 560)
For example, transfer previous test of 40 cut into worsted number.
40 x 300 = 12,000 divided by 560 = 21.42, or practically 21 1/2's worsted yarns.

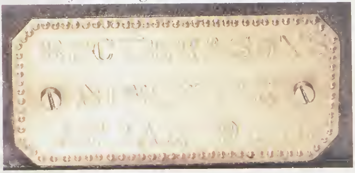
Showcase

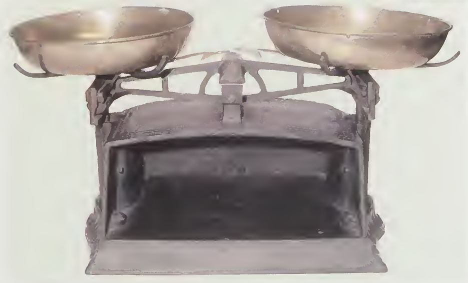


Christopher Becker was issued patent number 199,776 on January 29, 1878, for an *Improvement in Weighing-Scales*. The scale has a brass plaque, affixed to its front, that reads Becker & Sons New York Pat. Jan. 29, 1878.

A roberval with European stays, it is made of cast iron and brass. The patent reads in part: *I make this box open at one of its sides for the purpose of forming a convenient receptical to receive the different weights.*

An advertisement from Underwood's *Counterfeit Reporter* of 1884, reads in part: *Becker & Sons 6 Murry St. New York City. New and Improved Bank Scale. Also manufacturers of Balances and Weights of Precision. Patent Counter Scales made of Bronzed Iron with Nickel Plated Pads.* Prices ranged from $21.00 to $30.00.





The example shown measures 5$^{3}/_{4}$” deep, 8$^{1}/_{4}$” wide at the front, 8$^{7}/_{8}$” wide at the back, 7” tall to the top of the pans and 10$^{3}/_{4}$” wide including the spiders. The pans are not original.

To read more about the history of Christopher Becker and Becker and Sons see *Equilibrium* pages 477 - 478 and 995 - 1003 and Shannon's *The Assay Balance* pages 49 - 52.

Phil Wehman Collection.

Number 115 August 2008

ISASC

INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

A Balanced View

Well another summer has come and gone. Here at the Lake of Bays it has been quite wet, indeed we had record rain fall. In spite of that we had a great summer. A major project for me was the construction of a scale museum here at our summer home. Soon we hope to have all the scales out of boxes and back on display in their new home. We are in the final stages of preparing for the trip to the UK. Thirty of us will travel there this October where we will be hosted by ISASC Europe. We will see lots of collections and have an opportunity to add to our collections while shopping at the Newark Antique Fair and many other antique shops. I look forward to giving you a report upon our return.

Changes to the Bylaws

The management of your society is handled by a number of dedicated and hard working directors. The duties of management are assigned to board members based on their interests and experience. Over the past few years your board has taken on a number of new and exciting initiatives. The result has been that several board members are responsible for two or more initiatives. In order to create a better "balance" (no pun intended) the board has recommended that the bylaws be amended in order to increase the number of ISASC officers. The enclosed bylaw recommendation requires the approval of the membership at large. In essence the amendment will permit the board to change the number of officers as the need arises while at all times maintaining a specified minimum number of officers. Please peruse the amendment, cast your vote and return it in the self addressed envelope.

What's New on the Website?

Our website editor Carol Hayden reports the following additions and updates to the web site. Thanks Carol.

The **Special Interest Point of Contact Program** supports the exchange of information among members. Members who have specialized in a particular aspect of scale collecting are available to other ISASC members to answer questions, help with research or have a general discussion about their specific area of interest. To access, go to the Members Only section of the website and on the menu on the left hand side, click on *Point of Contact*. Allan Rodin is the administrator of this program and can be reached at a_rodin@hotmail.com or by phone 847-446-1701. Contact him if you have any questions or feel you can contribute to the program in any way.

The invitational write-up for the Kansas City convention is now posted on the website offering the first glimpse of what we will be doing in Kansas City. Also, there are several updates in the Regional Meetings section on the Home Page.

The Links on the ISASC website have been rearranged to make it easier to access websites you are interested in seeing. There are presently 35 links on the website. The first three links are our sister scale societies and are followed by sites showing private collections. Next are sites of museums showing scales and then websites for major scale companies. After these, are informational sites on scales and weights. If you have some spare time, take a look and peruse through the links on our website and I'm sure you will find something of interest to you. If you know of a website you think is appropriate as a link for the ISASC website, please contact our website editor, Carol Hayden, at carolscales@austin.rr.com. The Links can be accessed from the Home Page. Click on Links at the top of the page and the links will appear in the mid section. Scroll down and click on any that may be of interest to you.

A new section has been added to the Home Page called *ISASC Auction*. It is designed to highlight scales recently purchased at the Silent Auction at the convention. It is hoped it will bring in new members wanting access to the auction, as well as, entice current members to come to future conventions. If nothing else, it's interesting to look at the pictures.

Midwest Regional Meeting

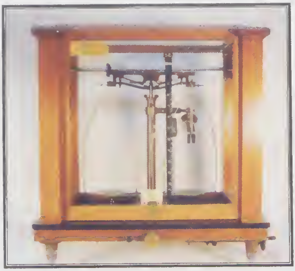
The weather was perfect when 15 collectors from 5 states met at the home of Don Shaw, in Cedar Rapids, Iowa on August 10, 2008, for the 3rd Annual Midwest Collectors Weigh-In. States represented were Iowa, Illinois, Minnesota, Missouri & Wisconsin. Those present were L-R back row: Dave Kral, Allan Rodin, Aviva Rodin, Mary Ann Kral, Jan Berning, Harry Hawley, James Reeve, Bill Berning, Larry Pugsley, Don Shaw, Donna Meeks & Bob Jibben. front row L-R: Patrick Kelly, Joan Pugsley & Judy Kelly. Almost every one went home with a new scale and a good time was had by all.

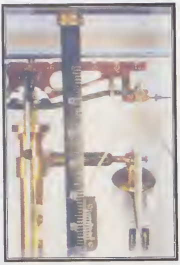
Michigan Regional Meeting

27 collectors from 5 states met, at the home of Ben & Mary Smith in Jackson, Michigan on August 23, 2008, for the 11th annual meeting of the Michigan Scale Collectors. States represented were Illinois, Indiana, Michigan, Ohio and Wisconsin. Those present were front row L-R: Cass Schorsch, Donna Schoenly, Shirley Schmidt, Jan Berning & Beverly Moss; 2nd row L-R: Joyce Glazier, Mary Smith, Ned Schaeffer, Garrett Turrall, Lorie Turrall, Rose Tope, Barbara Tope, Jim Tope & Joan Pugsley; 3rd row L-R: Bill Berning, Russell Tope, Marti Stimpson, Tom Meier, Larry Pugsley, & Utz Schmidt; back row L-R: Jim Dietrich, Jack Mickevich, Ben Smith, Larry Matson, Greg Moss, Don Schoenly & Richard Stimpson. The food was plentiful and a good time was had by all.

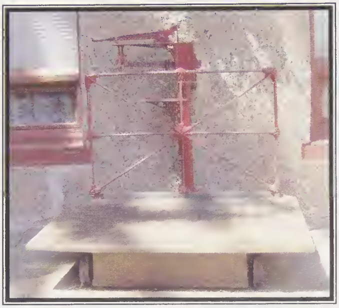
Articles for Sale

1. The following scale is offered for sale by Dick Ebeling,
Maker: Seederer Kohlbusch, Patent: 1408038 Feb. 28, 1922
Size: Base 16 3/4" wide, 9 3/4" deep, Overall Height 18".
Case: Mahogany, Magnetic Dampened, Gold chain (not Original),
Chain Wheel on Lower Right
$300 or best offer- Buyer pays shipping
Dick can be reached at 2120 Pleasure View Rd. Aurora, IL 60506 (630) 896-4941





2. The following English platform scale is being offered for sale by Don Shaw. Offered at $200 or best offer. Pound for pound the best scale deal you are likely to find!



It measures 48” tall and 48” deep with a platform measuring 54” by 36” and must be picked up. Don can be reached at 1846 B Avenue NE, Cedar Rapids, IA 52402 (319) 366-8389

Member Survey

Thank you to all who replied to the Survey sent out with the last newsletter. Your input is valued and will be used to help us continue to improve ISASC.

Some observations:

1. The survey reaffirmed that EQM is the number one draw of members. Access to other scale collectors, which includes conventions, is number two.
2. EQM received an excellent "grade" and several members took the time to add positive comments about EQM. The most common suggestion was shorter articles so as to have room for more articles.
3. The survey reaffirmed that for conventions-- site location, time of year and distance to travel all play an important part in the decision to attend a convention.
4. The conventions received an excellent "grade".

A number of you indicated that you would be interested in serving as an officer or as a committee member. Thank you, we look forward to including you as ISASC continues to provide additional services.

Welcome To New Members

I would like to take this opportunity to welcome the following new members and to encourage them to contact any of the members of ISASC should they have any questions.

Harry Hawley, Marion, IA (Jane)
Alex Homenuk, Abbortsford, BC (Maureen)
Michael Jullie, Coral Gables, FL (Gail)
Bruce Nordstrom, Playa del Rey, CA
Bill Squires, Blue Springs, MO (Laura)

In Memoriam

Sadly I report the passing of ISASC member Gary Force who passed away July 23, 2008, of a massive heart attack. He is survived by his wife Mary and their three children.

Bye for Now!!

If any of you have news or items of interest that you would like to share with other members of the society please let me know and I will be happy to pass them on. I can be reached by phone at (705) 635-9022 or by email at [illegible] .

Pete Laycock

Peter Laycock, President
ISASC

EQUILIBRIUM®

QUARTERLY MAGAZINE OF THE INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

2008 ISSUE NO. 4 PAGES 3405- 3432

Cover Picture

This English shop scale was made by Parnall and Sons of Bristol c. 1888. The company started as wholesale and retail furnishing ironmongers, cutlers, hardwaremen, manufacturers of wrought iron, tin, copper and japanned wares in about 1820.

By 1850 they specialized in supplying shops and hotel bars with all their hardware needs and shop fronts. By about 1880 they were specialising in scale manufacture, and producing catalogues of mainly shop scales. This peculiar scale never appeared in any surviving catalogue, and was apparently sold for only a very short period.

Details of this scale are given on pages 3414 - 3417.

In the collection of Don Schoenly

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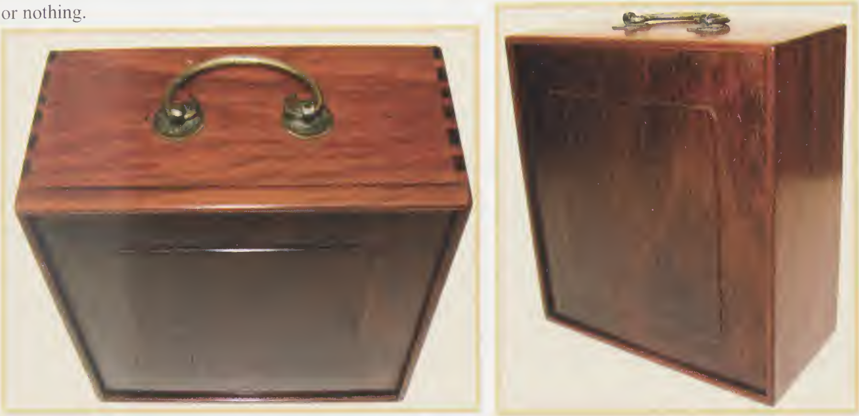
Article submissions are preferred in MS Word with Times New Roman Font size 12.
Photos are best in 300 DPI Jpegs in a separate file with a maximum of 3 photos per Email.

Cricket Anyone?

BY BILL DONIGER

Recently, I attended an antique show in the San Francisco Bay Area. This show usually has many fine antiques but it is not very productive for me. A couple of hours is my limit and I usually wind up with little or nothing.



Figures 1 & 2. ↗ ➤ The cricket scale case is made of rosewood with dovetail construction. Its dimensions are $7\frac{1}{2}$ inches high, 7 inches wide and $3\frac{1}{2}$ inches deep. Note the cast brass handle. The front panel slides upwards to expose the inside.

However, I walked into the booth of an Asian antique dealer who I had met before. On one of the shelves, I spotted a steelyard scale mounted in a rosewood box of dovetail construction. On further inspection, it definitely was Asian. The steelyard was made of ivory with a brass poise. On the other end was a small round wood container. What was it used for?

The dealer proceeded to tell me. It was to weigh crickets!

Crickets have been part of the Chinese culture for over a thousand years. They were prized for their chirping music and for their fighting prowess against other crickets. In China, cricket fighting tournaments take place in town squares. There are heavyweight, middle and light-weight champions. The crickets had to be weighed so that they were equal in size and weight before engaging in combat. Cricket matches were highly esteemed and the winners were

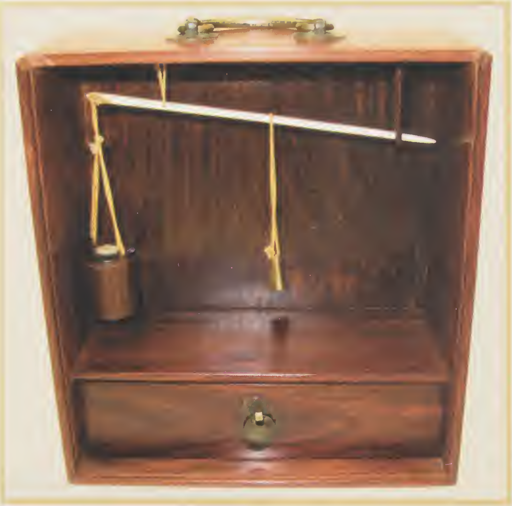


Figure 3. ↗ ↗ The inside of the case houses the scale and drawer to hold cricket fighting paraphernalia. Note the brass pull for the drawer.

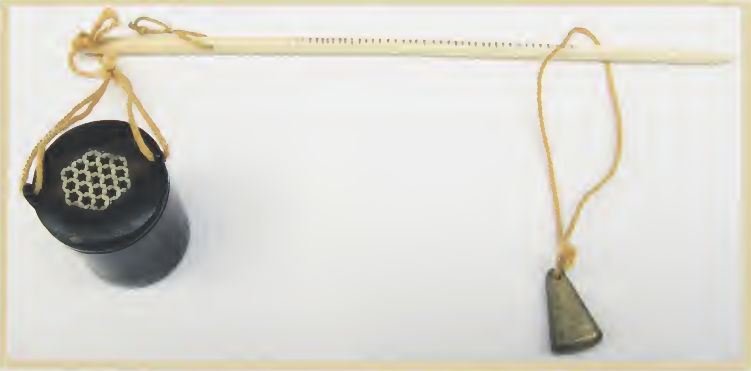


Figure 4. The steelyard scale beam is made of ivory and is 6 1/2 inches. The poise is made of brass. The cricket holder is a hollow rosewood cylinder 1 1/4 inches tall and 7/8 of an inch in diameter. The cover is made of rosewood with an ivory design. The ivory design is perforated to allow air into the cylinder.

valuable commodities. Even though gambling is forbidden by law, such laws are usually overlooked and single matches may produce stakes of over $100,000. The match usually ends with the death of one of the contestants.

With this scale came other items. A little rosewood case held an ivory tickler with a rat's hair attached to bring the crickets to a combat frenzy. A small rosewood coffin was included so that when a champion cricket died, it was placed in the coffin and buried under a tree near where it was caught. His spirit was to give good fortune to the cricket's owner and future crickets caught in this area. There is a drawer in the cabinet that holds the extra paraphernalia. The scale dates from the early 20th century.

I am always amazed at the variety of scales and weights that do show up in my antique hunting. I wonder if any other member has one of these.

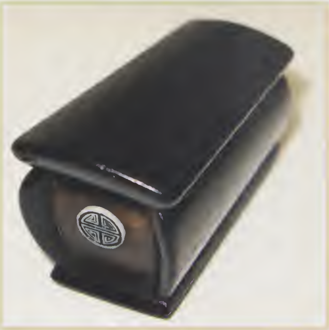


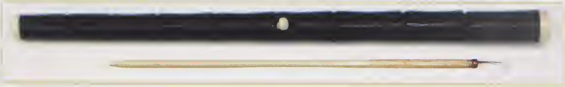
Figure 5. The cricket coffin is made of rosewood with an ivory medallion. The top comes off so the cricket remains can be placed inside. The dimensions are 2 inches long, 1 1/8 inches wide and an inch high.

Notes & References:

1. *Insect Musicians & Cricket Champions, A cultural history of singing insects in China and Japan.* Lisa Gail Ryan, China Books & Periodicals, Inc San Francisco, 1996.

2. The author's biography may be found in EQM on page 153.

Figure 6. The cricket tickler case is made of rosewood. The case is a wooden cylinder 6 inches in length. The cylinder is hollow and both ends have been capped with a piece of ivory. About 1 inch from one end, the case pulls apart to expose an ivory rod 4 inches in length. At one end of the ivory rod, a copper wire binds together a grouping of rat whiskers used to stimulate the cricket into fighting. Note on the case, an ivory wedge used to hold the ivory rod into place within the case.

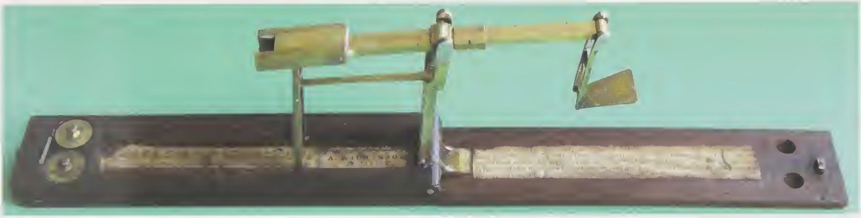


Why Check for Counterfeits?

BY MONA DUGGAN

On March 8th 1798 Anthony Wilkinson of Ormskirk published an advertisement for his gold balances in a newspaper in response to an order published by the Bank of England on January 31st of that same year. The Governor and Company of the Bank had claimed that the quantity of light gold coin in circulation was daily increasing, and had recommended the public to adopt the practice of weighing the coins that were offered to them.

Figure 1. Anthony Wilkinson started his business in Ormskirk, where this folding gold balance was made. It is only one of several designs that he invented during this period. This type worked with a turn-over poise to weigh either the guinea or the half-guinea. The round weights were added only so that the sceptical weigher could demonstrate that the balance tipped when a guinea weight (or a guinea) was put on it. Considering that people had used steelyards for centuries, it is difficult to understand why they needed convincing!

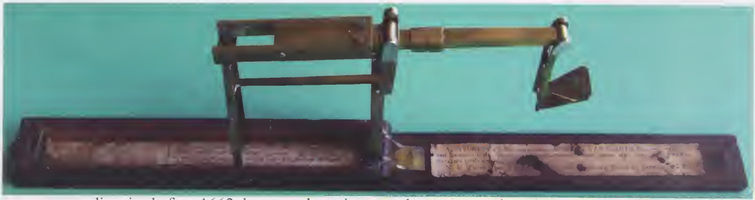


The authorities were extremely worried by the criminal practice of clipping the coins of the realm. In fact the government had taken stern measures against clippers as early as 1562, when it was decreed that it was high treason to *clip, wash, round or file current money whether English or foreign*, and thus made the crime punishable by death. However, the rewards were so great that the crime persisted, and by the mid eighteenth century, the problem was causing grave concern. One possible solution was attempted in 1776 when centres were set up where coins that were under weight could be exchanged in the hope that clipped coins could be withdrawn, and the clippers would be caught. Nevertheless the crimes continued and businesses suffered, but evidently in the North West, which had a long history of clipping and coining, some protection against such crimes was available in the 1790s. Indeed, five weeks after the Government's recommendation, Anthony Wilkinson published his advertisement, and in doing so, focused attention on his home town of Ormskirk, a small market town in the North West, 170 miles away from London, where he produced his answer to the problem - finely crafted folding balances.

Seemingly Anthony Wilkinson had decided not to concentrate on clock-making, which was the traditional trade of south west Lancashire, and had established a thriving business in producing the gold balances that he had invented. In fact in his advertisement he stated that his balances were sold *at least by one reputable person in almost every market town in the kingdom*, and that he was able to offer balances *either in portable boxes or fixed upon a pillar for the counter*. Why was he so successful? Of course he had the skills of the traditional clock-maker, but that would not have been sufficient, if the demand for the balances had not existed at first in his own region and then throughout the country. That demand was certainly there for, according to the Assize records, the crimes of clipping and counterfeiting had been prevalent at least a hundred years earlier throughout Lancashire.

It was very profitable to clip coins, because both silver and gold bullion commanded a higher price on the international market than the value of the same weight in English coins. The criminals trimmed the coins and then either sold the trimmings to dealers, or made their own counterfeit coins out of the trimmings by mixing them with a base metal. Then both the clipped coins and the counterfeit coins were returned into circulation at their full value, and the clipper pocketed his illicit gain. The results of the actual clipping process were

Figure 2. “ Anthony Wilkinson moved to Kirkby, and made several other variations. This type was made after the new 7 shilling coin, a third of a guinea, was brought out in 1797. With the extra turn, the guinea, half or third could be checked. By moving the little slide along, the loss of gold could be determined in pennies-worth, up to 12 pennies lost. Wilkinson signed this label (on the left end) to ensure that his customers were assured that he had made it, or rather, that it came from his workshop.



very easy to disguise before 1662, because the coins were hammer struck and were often off centre, but after 1662 there was machinery that produced milled edges to the coins. During that process they were compressed by a screw–press and so were more regular in shape. Nevertheless, as there was a great shortage of English coins, the early hammered coins remained in circulation until the re-coinage of 1696-7, and even strange foreign coins were used as currency in England. It was this shortage that perpetuated the crimes, because manufacturers and tradesmen were desperate for small coins, and so would resort to buying counterfeit shillings and sixpences in bulk from the coiners.

The role of the government in this situation was rather ambiguous. A supply of new coins was desperately needed, but there was great anxiety that any alteration in the currency might cause economic disruption and lead to political embarrassment. The Mint was responsible only for the production of new coins and the prosecution of illegal abuses of the coinage. It had no responsibility to *maintain or correct the ravages of normal wear on coin already in circulation*[1]. This meant that coins of all shapes and sizes, including foreign coins, remained in circulation, making it easier to disguise the results of clipping. As early as 1562 Parliament had decreed that it was high treason to clip coins, but no real measure was taken to withdraw the suspect coins and issue a supply of the small coins that was needed so badly by traders. Therefore coiners and clippers grasped the opportunity to make a handsome profit from the situation, despite the risks involved. Parliament responded by offering a reward of £40[2] - a substantial amount in those days - for anyone who caught and prosecuted clippers or coiners, and by awarding the grant of half of the £500 fine to any one who informed against the criminals. However, the judges were reluctant to accept the evidence of accomplices, and so the crimes persisted.

It was against this background that the following cases were brought to the Assize court in Lancaster. The original depositions of one informant and a constable provide a fascinating glimpse of life in seventeenth century England. The original spelling in the documents has been retained.

The widow and the West Lancashire clippers in 1682

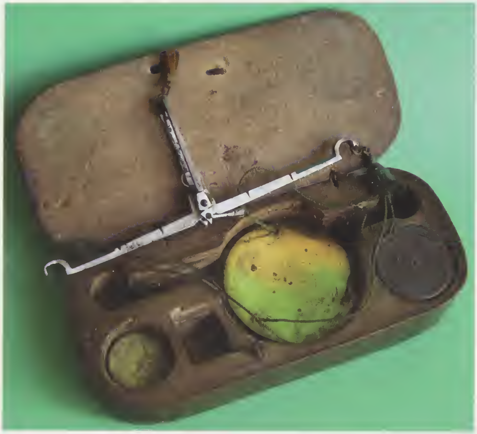
The information of Thomas Higham…The said Informant saith that about six years agone Jane Smolt widow … of Scaresbrick neer Ormskirke in Lancashire, did send one James Barton, a tenent of hers…. with a letter for this Informant to come to her house at Scaresbrick to speak with her. And saith that accordingly, he … went to her house. Who then told this Informant that she knew that he… had formerly bought clippings of [from] her late husband and therefore had then sent for him because she had then clippings to sell. And she then sold this informant six ounces of clippings at 4s the ounce to be paid in clipped money. And she, … did then impart to this Informant that she had a friend which had many times sold her husband clippings and then wanting vent[3] for them. She would recommend him to this Informant. And then told this Informant it was … James Barton .

And said she would send him the Friday following to Wigan being market day there, to one Arthur Winstanley's, this Informant's host [landlord], house there. At which place and time… James Barton accordingly came, and then sold to this Informant eight ounces of clippings off the current coin of England for 4s the ounce paid in clipped money.

And this Informant further said that after this time, … James Barton did frequently on the Fridays at Wigan at the Alehouse before mentioned meet this Informant with clippings and sold them at the rates aforesaid, and sometimes desired to have counterfeit money for them, for … James Barton constantly kept [attended] Wigan market where he sold corn and potatoes, that he bought his corn at Ormskirk where, as he said, he did put [dispose] off his counterfeit money.

And this Informant saith that about 3 years ago … James Barton removed into a town called Tarlescough near Rufford. And there after sometime, this Informant being invited to his house and stayed 2 nights, saw him clip three pounds of the lawful coin of this Kingdom of shillings and half crowns and bought those clippings off him which was about two year and a half ago.

Figure 3a. ↓↓ Until Wilkinson invented his folder, it was necessary to have a bigger box containing all the weights that the customer expected to handle. Although very simple, it weighs accurately to less than half a grain. It was made around 1680-1690, in the period when Thomas Higham was giving information on coiners to the Court.



Learning the skill of coining in rural Lancashire

And this Informant [Thomas Higham] further saith that about two yeares agone, … Arthur Barton did remove to a hall called Lisco in Rawcliffe in the Fylde country in Lancashire, and invited this Informant thither, telling him he might there have a very safe room to coin in. Whereupon he, this Informant, did April 1683, go thither and took his coining instruments and stuffe and materialls, and at Lisco … the house of one Mr. James Starkey, whereof part was set to … Arthur Barton, did coyne and teach … Arthur Barton to coyne, and upon that account, there stayed from April till August.

And about this time … James Barton removed from Tarlescough to this Rawcliffe to keep a Dayrie there. And came often to Liscoe aforesaid to this Informant there with clippings which were by this Informant then melted downe and mixed with other metals and coined for him, he being present. And this Informant saith that … Arthur Barton did promise to give this Informant five pounds to teach him to coyne. And did give him ten shillings of it in hand, and saith that he did teach him to coyne and often saw him coyne. And that the said Arthur boast-

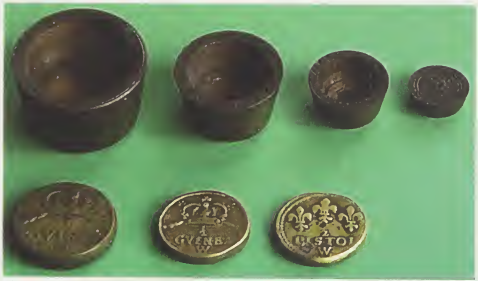


Figure 3b. ↑↑ This scale had weights for the gold guinea and half, and the gold French pistole (missing) and its half, plus nesting weights for silver coins of 5 (V) shillings, 30 pennies (XXX D) or 2/6, for 12 pennies (XII D) or 1 shilling, and for 6 pennies (VI D) or sixpence. Additionally, several tiny squares of brass sheet, cut to weigh 1 grain, 2 grains, 3 grains etc, would originally been stored in the little square hole, which had a sliding wooden lid to prevent their loss. These grain weights would determine how much gold had been clipped off the coin, and 2 pennies deducted for each grain lost.

ed he could coyne as well as this Informant. But in regard this Informant had la[in] so long at …Arthur's house and paid nothing for his meat, drink and lodgeing, he took no more for teaching him to coyne.

The honest watchmaker's encounter with a clipper

And the said Thomas Rainford then also told this Informant that he went last Christmas to Warrington with 5 ounces of melted clippings which were his brother George's, to sell. And being at one Thomas Moncy's house in Warrington, alehousekeeper, he sent to a watchmaker to know if he would buy a parcell of silver. The watchmaker sent his man desiring to see it. Whereupon Thomas Rainford carried it to the watchmaker who questioned him where he had it. Thomas Rainford giving no good answer, the watchmaker directed his man to call a Constable. …Rainford then answered he would go and bring good proof where he had it, so he went out of the watchmaker's shop and came back no more, but left the silver behind him.

The Alderman's tankard

And this Informant further saith that Mr.William Laithwaite, now Alderman of Wigan, being about five yeares agone, drinking as often he had before that time used to do, at Wm.Beveington's house with this Informant. … And this Informant further saith that about half a year after that time, he again met the said Laithwaite at William Bevington's house, and … Laithwaite then told this Informant he had some clippings to sell. But this Informant then being to go into Staffordshire desired the said Laithwaite to keep those clippings for him till he, this Informant, came back which … Laithwaite promised to do.

But in the meantime … Laithwaite had occasion to be at some Fairs in Yorkshire. After he, this Informant, were returned, [he] told this Informant that he the said Laithwaite durst not leave those clippings in his Chest, but that he did melt them down into a lump and put that lump of silver into an old pewter flagon beating the mouth of the flagon together and leaving it with a parcel of old pewter; and, at his return from the fairs in Yorkshire, having thence brought more old pewter, he sold all the said old pewter together (not remembering the said lump of silver left in the old flagon) to one Gilbert Langshaw of Wigan, pewterer, who melting down his old pewter together, found the lumpe of silver which he shewed to the then Mayor of Wigan,….. Laithwaite was examined about it, as … Laithwaite told this Informant, but Laithwaite denying that he knew anything of it the matter ceased.

This Relation the said Laithwaite himself made to this Informant in Laithwaite's, Colepit field.

Leisure and illicit treasure on Bickerstaffe Bowling Green

And this Informant further saith that another time after this, he, ... met the said Joseph Worthington at a house at the 4 Lane Ends in Bickerstaffe, who, upon the bowleing greene there, gave this Informant out of his pockett three ounces of clippings of the currant coyne of England, telling this Informant then it was what he the said Joseph had clipped of fower pounds of fair large money. And this Informant saith yt one Thomas Ascoft and Mr. Barnes were then playeing a set at bowles, and after the said Joseph Worthington and this Informant, the said Thomas Siscroft and Peter Woosie, who then kept the alehouse there, did play at cards in the bowleing green house most part of that night.

The Coiners are Caught

And this Informant further saith that from thence this Informant went into Ireland. And at his return thence with one William Bevington, they stayd all night with the said Arthur Barton, who then shewed them seven half crowns which he told them was of his, the said Arthur's, own coining and gave them two of those half crownes, which they putt off in Cheshire for good money.

But this Informant further saith that at that time, he, this Informant, and the said William Bevington borrowed of the said Arthur Barton a pair of flasks and a melting pot, which they brought up to London, which flasks were taken from them when they were apprehended by one Mr Macy employed by or an agent for the Wardens of the mint.

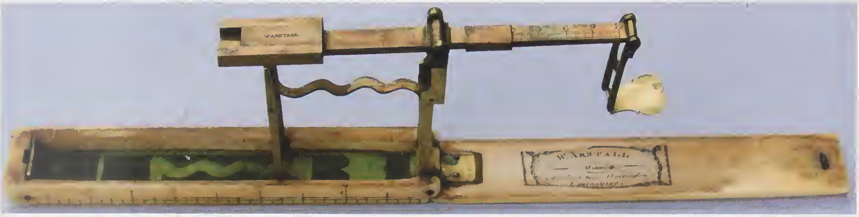


Figure 4. A folding guinea balance made or retailed by one of Wilkinson's competitors, William Arstall of Halebank, Warrington. Normal folders were in a mahogany box, but this rarity is in an ivory box engraved with an inch ruler. The wavy link is exceptional, of a design never seen by Michael Crawforth.

An arrest by a Constable

The Information of Samuel Blinston of Orford within Warrington….. the 17th day of July 1701. Who informeth and saith that he, going as an assistant with Mr George Dane one of the Constables of Warrington …, to Daniel Coppock's of the same [place], Innkeeper, to search a man that called himself Richard Nixon and a woman that called herself Ellen Nixon, his wife, who were suspected to be counterfeiters and venders of bad money, And searching the said Richard Nixon, he this informant and the said George Dane found in his breeches pocket four shillings and two sixpences, the four shillings being counterfeits in the imitation of the current coin of the realm.

And this informant further saith that he and … George Dane found in …. Nixon's custody, instruments commonly called flasks to cast metal in and several pieces of mixed metal and two bags in which there was materials like unto powdered alabaster and two files, a wire brush a burnisher and several crucibles to melt metal in, And also found in … Nixon's custody a bundle of papers amongst which there was two papers that doth import that … Nixon had been ….[arrested] and condemned for some noteable crime committed in Ireland and further informeth not.

[End of information]

The expert metal workers of Lancashire later grasped the opportunity to use their skills to provide some protection for the general public. They produced balances that were so finely tuned that they could detect that a coin had been clipped. Nevertheless the crimes continued until 1922 when cupro-nickel coins were introduced to replace the silver ones, making it was no longer profitable to clip coins. It is very possible that Anthony Wilkinson's balances were used to check the weight of coins until that date. Now the balances themselves are collected as interesting antiques.

Notes & References:

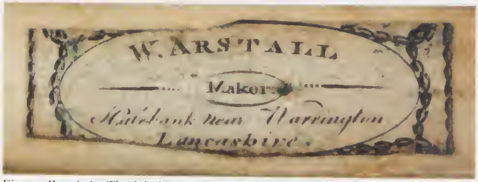
1. Brewer, J, & Styles, J, *An Ungovernable People, the English and their law in the 17c and 18c.* Our traitorous money makers': the Yorkshire coiners and the law, 1760-83. London: Hutchinson, 1980, p.175.

2. One shilling is worth five pence today, but was worth much more in the 1600s. Some comparison can be made by the fact that at that time the Quarter Sessions awarded a poor family with children one shilling to pay for their keep for one week. That meant that the reward of £40 was worth 800 week's of keep to a poor family.

3. Vent meaning an opportunity to sell them.

Author's Biography:

Mona Duggan is a local historian of the Lancashire area, with an extensive knowledge of the trade practices and the social patterns there. She has lectured and published books and articles of great value to both the general public and to historians. She gave a lively talk to ISASC Europe when we met in Liverpool in April, 2008.



W. ARSTALL

Maker

Halebank near Warrington

Lancashire.

Figure 4b. The label was cut to fit into a shaped mahogany box, but was used in this straight-sided box.

A Conundrum: William Parnall's Improved Beam Scale

BY DON SCHOENLY

Donna and I took a vacation this spring in Aruba. As is our usual practice we explored the island. We usually look for antique shops when doing our exploration and came across what the proprietor told us is the only antique shop on the island. Aruba is a Dutch Island, so, as you might expect, most of what was in the shop was Dutch, but there were some English antiques. This scale was in a prominent spot just inside the entrance and caught my eye right away. My first reaction was that it was a little expensive and a little big for getting home. In talking with the owner we learned that her husband, who is from Holland, had a grandfather who owned three antiques shops in Holland. When he died her husband inherited all the inventory, which over the years they have been bringing to Aruba to sell. How the scale got from England to Holland is anybody's guess.

So Donna and I decided to sleep on it. The next day we went back and I asked if I could take the scale apart, which the owner let me do. As I did this, I could tell it wasn't put together correctly. It took me a little time to figure it out, and then it didn't make sense to me. So I figured it must be something unusual. The owner said she would pack it for us and even send it to the States if we wanted her to, or bring it to our hotel. We were able to negotiate an improved price and decided to buy it. The next day it was delivered to our hotel and the rest, as they say, is history.

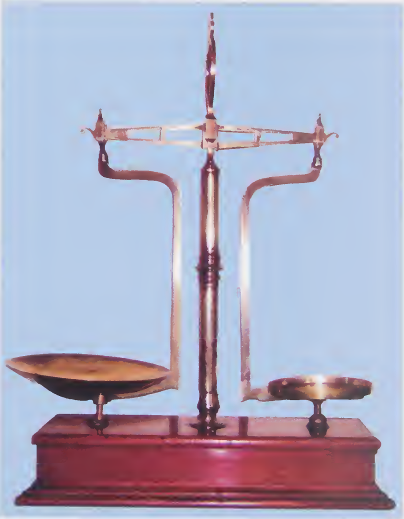


Figure 1. ↗↗ The balance measures 27½" tall and has a 14½ inch long beam. The moulded mahogany box is 19" long, 8¼" wide and 4" high.

This scale has a unique feature. At first appearance it looks like a good English, equal-arm beam, shop scale. It stands nicely on a mahogany box. Upon closer inspection

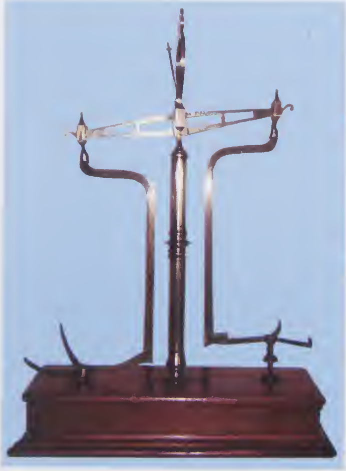


Figure 2. ↖↖ With the pans removed the metal rod under the weight tray, with its stop and collar, is clearly visible. The scale has a 4 lb capacity.

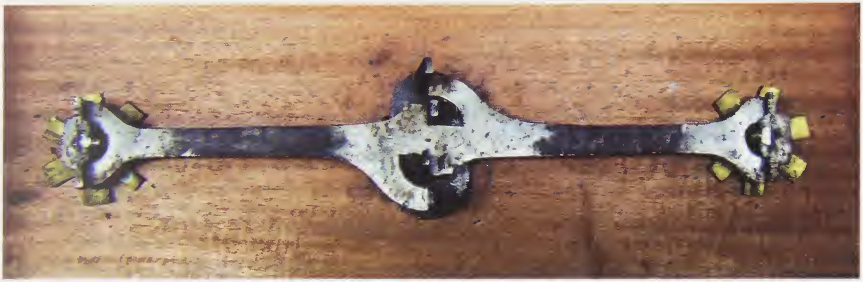
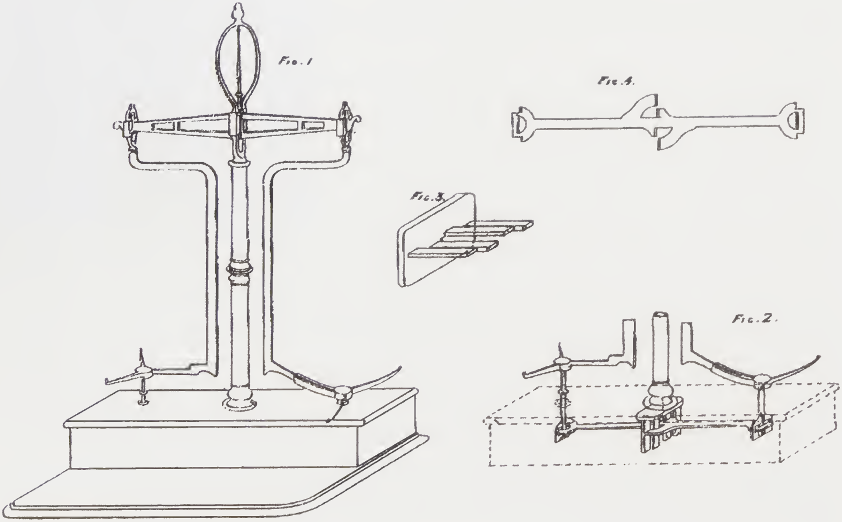


Figure 3. The metal rods are attached on the bottom to these French stays. This connection stabalizes the pans when the weights and load are applied. This way only vertical movement of the arms is possible thus enabling faster weighing operation.

you will notice a metal rod below each of the arms [cranks] that hold the trays. These are screwed into the bottom of the arms and extend down into the box through a hole with a brass collar. On the side with the pan for the weights is a "stop" which is a part of this metal rod. When looking under the box, you see that the metal rods are attached to a French Stay[1]. The brass column that holds the equal-arm beam has two sets of threads in the bottom. The larger set of threads screws the beam into the top of the box in a brass collar. The small set of threads extends below the top of the box and has a bracket screwed into it that holds the middle of the French Stay. The equal-arm beam is all functional. The agate boxes [Sharkey ends] have agates in them and the knives are all in place.

Figure 4. British Patent number 11592 was issued to W. Parnall on August 26, 1887. The patent drawings clearly show that Parnall manufactured his scale to specifications. The only detail subtracted from the existing scale is the tray front on the box. This illustrates in detail how the scale mechanism is constructed.



On the beam is stamped "W. Parnall & Co. Bristol Patentee". Also it is stamped "To Weigh 4 LBS" on the top part of the beam. On the bottom part of the beam on both the front and the back is stamped "Patent", on the left side, and the number "11592" on the right side. Stamped in the very center of the beam is a funny symbol, probably a Weights & Measures stamp, and the number 38 which would signify that the beam was passed for trade use in the district of Bath. On the top of the harp is stamped a capital "Rd" and the number "120333", showing the registration design number.

Jack White, an English member of ISASC, was able to obtain the patent and the Registration Design, from the British National Archives. The Registration design doesn't tell us much (as registration was used only for the appearance of the scale, not its engineering principles,) except that the picture is exactly like this scale.

The patent of August 28th, 1887, tells us why William Parnall made this beam scale with subsidiary links below, going to a French Stay. In Parnall's words; *This invention relates to improvements in the beam and weighing machines generally in which the scale pans or other equivalent are suspended from a beam by rods or the like in such a manner as to leave the pans free to oscillate and the invention consists principally in establishing a connection between the lower extremities of the pan supports and the base of the pedestal or pillars which carries the beam where by the pans may be prevented from swinging and be limited to a vertical movement only.*

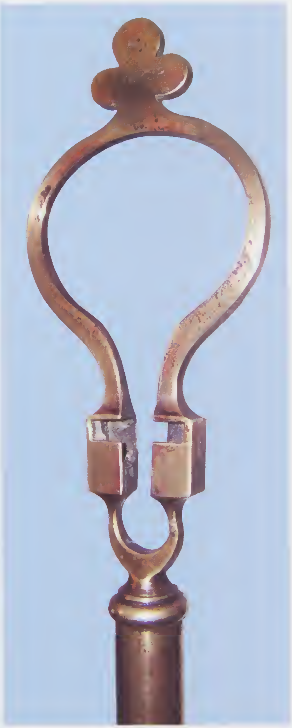


Figure 5. The lyre atop the scale is not like most British scales as it has a trifoil as its finial. Stamped into the trefoil is Rd 120333.which is the British registration design number. See figure 6.

So Parnall added a French Stay to his beam scale to prevent the swinging and swaying of the pans. ISASC members would probably classify this scale as a roberval scale, acting as a parallel linkage, with the pans mounted well down the cranks, instead of above the top beam. Reading Owen's book *A Treatise on Weighing Machines*[2], he shows exactly the principle used by Parnall, but makes the slightly derogatory comment *But the construction shown in Fig. 96 is somewhat cumbersome. The stay [top beam] projects over the goods pan, and does not leave much room for the goods.* All right, the beam does project as far as the centre of the pan, but as the pan was obviously intended for small amounts (being of 4lb capacity), it can scarcely be called cumbersome.

Owen makes it clear that the inverted roberval, with its two parallelograms, was more efficient than the plain rectangular roberval, and many manufacturers were making inverted robervals from about 1818 onwards. So why did Parnall revert to the plain rectangular roberval? Why was he permitted a patent? It makes this scale even more of a conundrum!

It is interesting to note that Parnall may have been trying to obtain a patent on china boxes, with the claim of the patent as follows; *A moulded box or case for supporting a weighing machine or balance composed of* *china, earthenware or the like kiln baked substantially as described.* If Parnall made these china boxes, they would have been a cheaper, lighter version of the conventional marble box, equally easy to clean, and possibly much more decorative. Very few china boxes have survived, possibly due to their fragility; in fact, only one example comes to mind, that was made well after Parnall took out his patent. It was a handsome counter roberval by W & T Avery Ltd, shown in their 1915 catalogue[3].

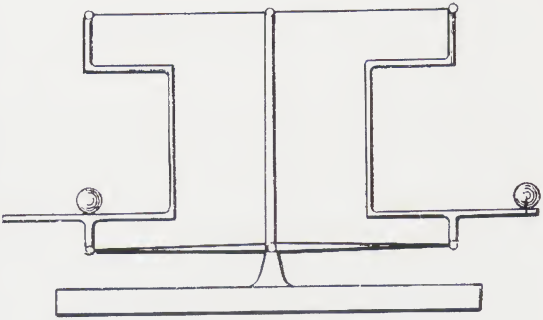


Fig. 96.

Figure 6. Owen's book *A Treatise on Weighing Machines* shows exactly the principle used by Parnall, but makes the slightly derogatory comment *stating that the construction shown in Fig. 96 is somewhat cumbersome. The stay [top beam] projects over the goods pan, and does not leave much room for the goods.*

The patentee's address is given as 108, Victoria Street, Bristol, premises he occupied only from 1883 until 1894, but once William Parnall had obtained his patent, he could make the scales anywhere he wished, so we cannot use the address as a means to dating.

However, there are no class markings on this scale. Since the patent was awarded in 1887 and classes didn't come into use in the UK until 1893, we can assume the scale was made between 1888 and 1893, especially since this scale does not show up in Parnall's 1895 catalogue.

Parnalls were specialist shop-fitters, not only scales makers, so they had a huge customer base, especially in the south-west of Britain. If this scale had proved popular, surely it would still have been made in 1895? The 1895 catalogue does not include any examples of robervals with the pans down the cranks, nor does it include any china boxes, even though Parnall had specifically claimed a patent for them.

So questions remain. Why don't we see more of these scales? Were they too expensive? Did the market feel this extra stability was not needed? Or is there another reason? This scale really is a conundrum.

Notes & References:

1. A French stay was a continuous flat beam, with flaps turned at its ends and in the middle so that the knives were vertical not horizontal. The British did not use French stays on postal roberval scales, but they were much used by the late 19th century on trade scales, being a better engineering solution.

2. Owen, G A, *A Treatise on Weighing Machines, a guide to the Principles Underlying the Construction of Weighing Instruments*, pub. Charles Griffin & Co Ltd, London, 1922, pp. 92-93. Interestingly, Owen uses this diagram purely to illustrate the difference from inverted robervals, with no thought that the principal had ever been put into practice! Had he never seen "my" Parnall oddity? Would he have withdrawn the adjective "cumbersome" if he had seen it? I like to think so.

3. Palmer & Sons, J H, Auction catalogue Complete Private single owner collection of Antique Scales, Measures and Weights, 22nd October, 1999, lot no. 439. The weight plate has a transfer [decal] stating "By Appointment to the Late King Edward VII", so was made after his death in 1910. As plates needed to be replaced frequently, we cannot use this as a clue to the date - although it might be that early.

Acknowledgments:

With thanks to Jack White, John Lound, Albert Rangeley, John Doran and Diana Crawforth-Hitchins.

Author's Biography:

Don Schoenly retired after 35 years in the pharmaceutical industry. He lives in Glen Ellyn, Illinois, a suburb of Chicago. Don is a long time member of ISASC and collects all kinds of scales as well as other antiques. He and his wife Donna welcome visitors to see their numerous collections and enjoy visiting other members to see their collections. Don welcomes correspondence from other members.

Losing a Few Pounds

BY KURT BEYREIS

From a distance it looks like a normal Salter circular spring scale as shown in Figure 1. It gets stranger the closer you examine the scale.

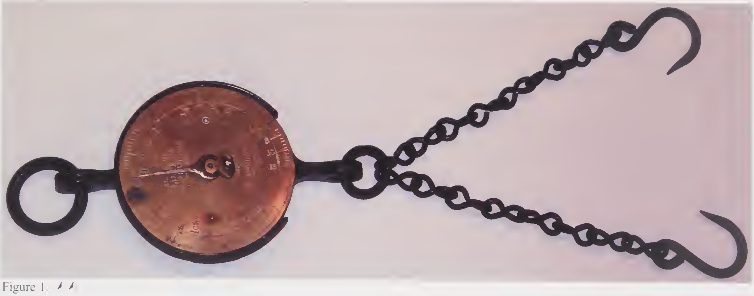


Figure 1.

Looking at the6" diameter face in Figure 2, it has a capacity of 127 pounds and is a Class III scale, placing it as a trade scale manufactured between 1893 to 1907. It has two large hooks that appear to be similar to the hooks used on sack scales. The weight divisions are pounds and fractions of a hundred-weight (cwt or112 pounds). Now it starts to get strange. The weight divisions go from 0-15 lbs by pounds and then a blank space to ¼ cwt. The blank area equates to 13 lbs for a total of 28 pounds or ¼ cwt. then there is another 0-15 pounds section and a 13 pounds blank section and a ½ cwt mark (56 lbs) and so on until 1 cwt is reached. The last blank space after 1 cwt is 15 pounds not 13 which results in a total capacity of 127 pounds. How would you use a scale that is missing nearly half of the pound graduations?

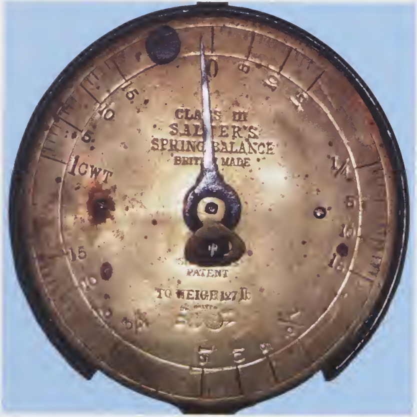
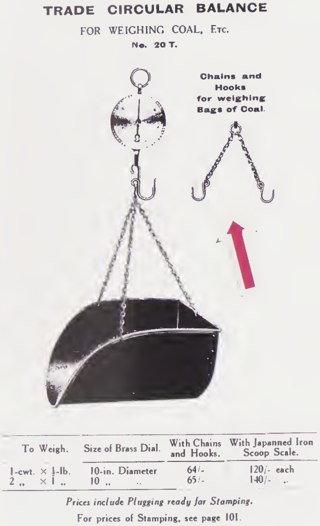


Figure 2.

Looking at Salter catalogs from the period, the style of hooks and the use of fractions of cwt were used on coal scales before and after the turn of the 20th century. They were similar although none of them looked exactly like my scale (the catalog scans are shown below in figures 3 and 4).



TRADE CIRCULAR BALANCE

FOR WEIGHING COAL, ETC.

No. 20 T.

Chains and Hooks for weighing Bags of Coal.

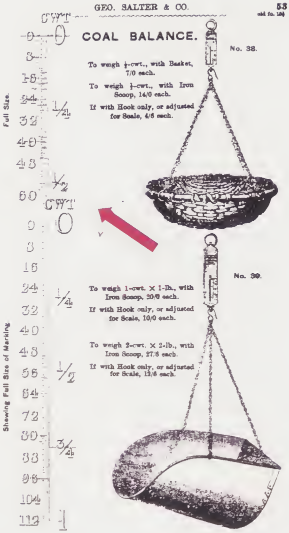
To Weigh.	Size of Brass Dial.	With Chains and Hooks.	With Japanned Iron Scoop Scale.
1-cwt. × ½-lb.	10-in. Diameter	64/-	120/- each
2 ,, × 1 ..	10	65/-	140/- ..

Prices include Plugging ready far Stamping.

For prices of Stamping, see page 101.

Figure 3. ↖↖

Figure 4. ↗↗



GEO. SALTER & CO. 53
old fo. 184

COAL BALANCE.

No. 38.

To weigh ¼-cwt., with Basket, 7/0 each.

To weigh ½-cwt., with Iron Scoop, 14/0 each.

If with Hook only, or adjusted for Scale, 4/6 each.

No. 39.

To weigh 1-cwt. × 1-lb., with Iron Scoop, 20/0 each.

If with Hook only, or adjusted for Scale, 10/0 each.

To weigh 2-cwt. × 2-lb., with Iron Scoop, 27/6 each.

If with Hook only, or adjusted for Scale, 12/6 each.

Full Size.
CWT
0
0
8
16
24
¼
32
40
48
½
60
CWT
0
0
8
16
24
¼
32
40
48
56
½
64
72
80
¾
88
96
104
112
1
Shewing Full Size of Marking

Coal higglers (an adaptation of “haggler”) often sold coal door-to-door from a horse and cart. During those times coal was sold retail by fractions of a cwt in sacks, baskets, scoops or sometimes a container provided by the buyer. Since this scale has only a small adjustment for zeroing the pointer and no adjustment for tare, I speculated that since the coal was sold in different containers, the tare weights were different as well. It would appear that the 0-15 pound gradations for each ¼ cwt was used to measure tare weight of the container used to hold the coal as long as the tare weight was not more than 15 pounds. For example, if the buyer wanted a ¼ cwt of coal and had used their own coal scuttle as a container, the higgler would weigh the scuttle, say four pounds, and then would fill it up with coal to ¼ cwt plus four pounds. Considering the education level of the populace of this period, this scale would not require much, if any, arithmetic to complete the transaction. Even if one or the other could do the calculations using a standard scale, the other party would not necessarily be able to check and would assume they were being cheated. It also is interesting to note that often coal scuttles of the time had approximately the capacity of multiples of quarter fractions of a cwt (¼, ½, ¾ and 1 cwt).

My conclusion is that this probably was a standard Salter circular spring scale but that the face was inexpensively adapted for the coal higgler trade, being small, compact, portable and flexible. It probably was not made in large quantities since many of the people I had talked to about it have not seen a scale of this configuration before. Any additional information or ideas about how this scale was used would be appreciated.

Notes:

I would like to thank the many people who helped me with information for this article but especially to Jan Berning for the scans from the Salter catalogs.

Growing up with Milk Scales

BY LESLIE N. FIRTH

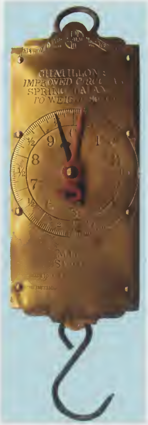


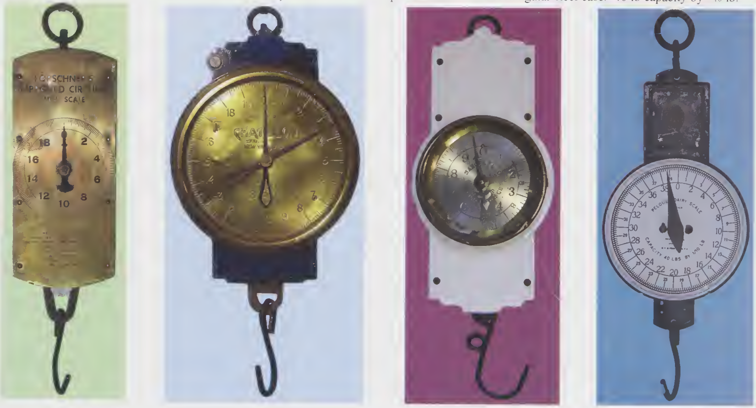
Figure 1 The milk tester would arrive with a shiny brass milk scale like this one made by Chatillon. Its capacity is 30 lbs and its face measures 10 ½" by 4 ½".

The importance and use of milk scales were lessons taught, on our Pennsylvania dairy farm, to me as a youngster and teenager. We weighed milk from our cows twice daily and weighed the grain fed to individual cows. Once a month the milk tester would arrive on our farm complete with a shiny brass fronted spring scale, Babcock butterfat testing equipment including a centrifuge, acid, calipers and record books. Visitors in those days were scarce. It was exciting to see someone who did not live on our farm or in our neighborhood. It was an opportunity to hear the news from away from home. The milk tester weighed the milk from each cow for two milkings, tested the milk for butterfat content and recorded the individual cow production records. This information was used by the dairy farmer as the basis for culling cows and improving his herd's production and profitability. The milk tester ate meals with our family and stayed overnight in our home.

The milk tester (Dairy Herd Improvement Association supervisor) was employed by our county Dairy Herd Improvement Association [DHIA].

Prior to DHIA milk testing, early records of butter and milk production were recorded by individual breeders of cattle for their own use. An early pioneer recorded 511.1 pounds of butter churned from the milk produced by a Jersey cow over a 350 day period. The year was 1854. In 1890 the Babcock test was introduced allowing milk to be tested for fat content and the butter production of a cow was calculated on the basis that butter was 83.5% fat.

Figures 2-5. Milk scales were manufactured in different styles and by many different companies. Shown below from left to right are: 1 Forchner's Improved Circular Milk Scale with a 60 pound capacity by 1/10 lbEach 20 lbs is shown on the slide and the intermediate weights on the dial. 2. Chatillon Milk Scale with a round brass dial on a blue enameled rectangular case. 40 lb capacity by 1/10 lb. 3. Sargent & Co. Improved Spring Balance with a glass covered, brass framed nickel plated face and 30 lb capacity. The rectangular face is porcelain over steel. 4. Pelouze Dairy Scale with a round porcelain face on a rectangular steel case. 40 lb capacity by 1/10 lb.



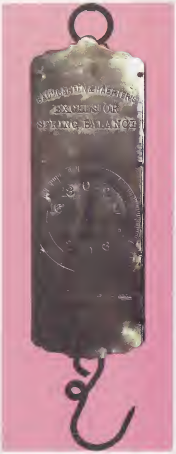


Figure 6. Baumgarten & Haerter's Spring Balance was an early milk scale with a single hand. The brass face measures 12" by 4 7/8".

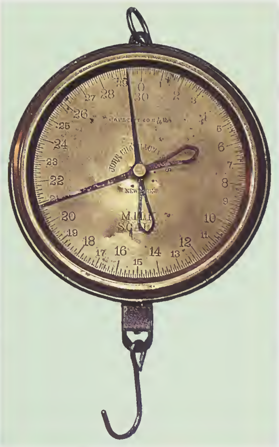


Figure 7. John Chatillon & Sons made this round brass faced milk scale. The face measures 8" in diameter. By presetting the bucket weight with the red tare hand, one can easily determine the milk weight. Capacity is 40 pounds by 1/10 lbs.

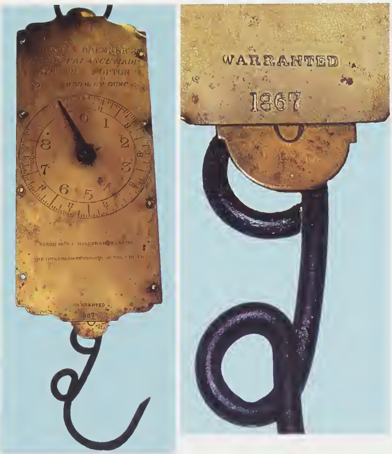
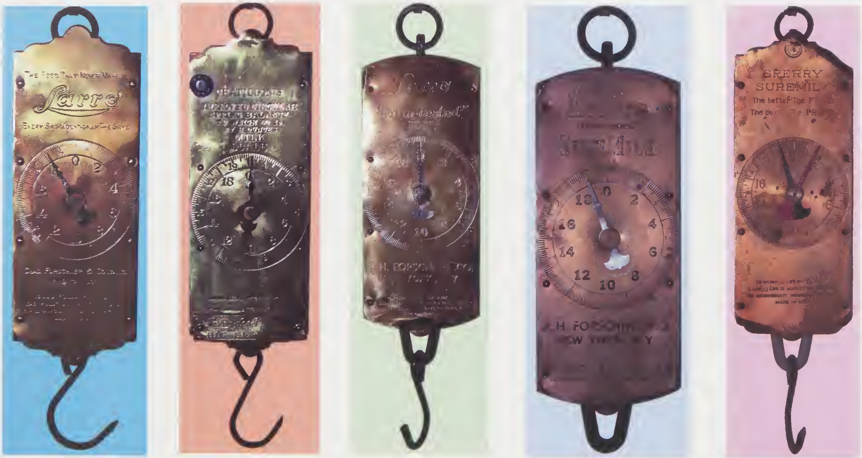
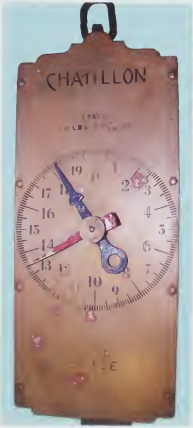


Figure 8 a & b. This early single handed milk scale is marked *Morton & Bremner's Spring Balance Made By Thomas Morton. To weigh 30 lb by ounces. Each 10 lb is marked on the slide, the intermediate weights on the circle.* Detail at right shows the date of 1867 and a close-up of the slide inside this scale. The looped hook is usually found on earlier milk scales.



Figures 9-13. The evolution of advertising for Larro, Big Six and SureMilk may be followed in the 60 pound capacity advertising milk scales shown here. They are as follows left to right: 1. Larro: The Feed That Never Varies. Every Sack Identically The Same. Made by Charles Forschner & Sons. New Britain, Conn. 2. Larro-feed and Big-Six Two High Grade Ready Rations for Dairy Cows. Chatillon's Improved Circular Spring Balance. 3. Larro "*Farm-Tested*". Made by R H Forschner Co. New York, NY. 4. Larro "*Farm-Tested*" Sure Milk. Made by R H Forschner Co, New York, NY. 5. Sperry Suremilk. The better The FEED The better The PROFIT. Many milk scales found today have bent corners like this one due to their rough use in barns for weighing milk.



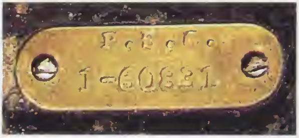


Figure 14 & 14a. ↖↗ Affixed to the back of this Chatillon 60 pound capacity milk scale is the brass tag shown above. PSC stands for Pennsylvania State College. Since 1953 the new name of this school has been Pennsylvania State University. Therefore, this scale dates before 1953.

In 1905, Helmer Rabild, a Danish immigrant, was an inspector for the Michigan Dairy and Food Commission. He organized a meeting of Michigan dairymen to discuss the formation of a cow testing association. In 1906, as a result of his plan, 31 Michigan herds with 239 cows made up the first cow testing association in the United States. He would later work for the United States Department of Agriculture to extend cow testing on a nationwide basis and by 1929 all states had cow testing associations.

In 1914 the Smith-Lever Act established Cooperative Extension in all United States. Thus our Land-Grant Universities became involved in DHIA work. This added significant credibility to the entire program.

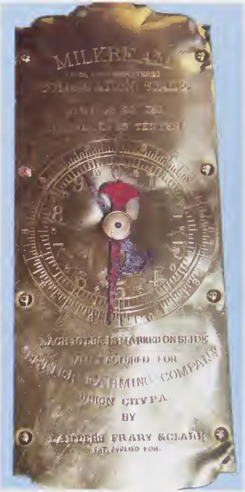


Figure 15. ↗↗ This scale is the author's favorite. It reads as follows: *Milkream, Trade Mark Registered, Combination Scale, to weigh 30 lbs by ounces or tenths. Each 10 Lbs. is marked on the slide. Manufactured for Better Farming Company, Union City, PA. by Landers, Frary & Clark. Pat. applied for.*

A number of different scales have been produced to measure the production of milk and help cull low producing cows. Utz Schmidt handed out some note pads at the Michigan convention and one shows an early Michigan milk scale. Utz has also written two articles on the Dairyman's milk scale from Pennsylvania[1]. This Meloney automatic milk scale was a combination scale and record keeping register and was in use in the very early 1900's.

My education included attending the Pennsylvania State University, and upon graduation, part of my first job was supervising six DHIA (Dairy Herd Improvement Association) milk testers for Penn State, who kept the official results on about 200 dairy herds.

I started collecting scales nearly 40 years ago, and yes, my first collection consisted of over 30 different spring scales used as milk scales on dairy farms. I collected Chatillon, Forschner, Pelouze, Landers, Frary and Clark and Hanson. They are round, or rectangular tin or brass fronted scales and some have glass covered dials. Milk scales evolved from single hand scales to scales with two hands. One hand would be set to allow for the tare (weight of the bucket). The scale could then be

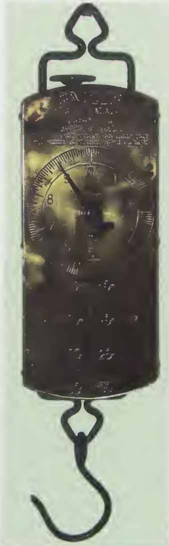


Figure 16. ↖↖ Salter of England manufactured this 30 lb capacity milk scale with two scales. It was also available in a 60 lb capacity in the 1950s and has a brass face which measures 10¼” long by 4½” wide.

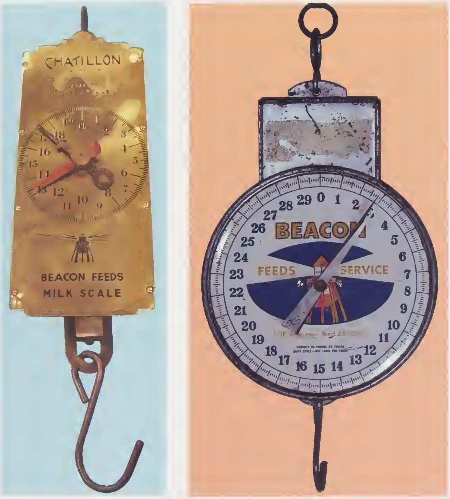


Figure 17 & 17a. ↖↗ These two milk scales advertise Beacon Feeds. Beacon Feeds was owned by The Beacon Milling Co in Cayuga, NY from 1920-1960. By 1965 it was owned by Textron Inc. in the same city[2]. Both of these scales are 60 pound capacity. The painted steel cased scale on the right reads Beacon Feeds Service. Top Dairymen feed Beacon. It was manufactured by Hanson Scale Co.

read directly to record the weight of the milk only. Most milk scales have 2 hands.

Scales used by milk testers, seldom if ever, were advertising scales, as this would have shown favoritism.

Many of these spring scales I collected were also used as advertising pieces – primarily by cow feed manufacturers. Companies, such as Purina, Master Mix, Larro, Beacon Feeds, Pillsbury Best, U Biko Feeds, Kasco Feed, Full-O-Pep and Globe milk producers are represented in my collection.

A number of these advertising scales were manufactured by Chatillon and Forschner. For example, Chas Forschner, New Britain CT, produced a scale for Larro Feeds, as did R.H. Forschner, NY, NY for Larro – their sure milk scale. Purina brass fronted scales appear to be manufactured by Chatillon. Some carry the familiar checkerboard advertising and some only had plates riveted on the front for the name and advertising. Purina also used a round, painted-face milk scale.

Milk scales typically came in 10 pound increments (dial 3 x around) for 30 pounds maximum weight and 20 pounds (dial 3 x around) for 60 pounds maximum weight.

My favorite milk scale is a brass fronted spring scale manufactured for The Better Farming Company, Union City, Pennsylvania, by Landers, Frary and Clark – Pat. applied for. Union City, Pa, is located in the heart of Erie County, Pennsylvania – where I supervised milk testers on my first after college job! See figure 15.

My collection also includes a Morton-and Bremner spring balance – brass front rectangular scale carrying an 1867 date and it has one hand. It was made by Thomas Morton to weigh 30 pounds of milk (dial 3 x around).

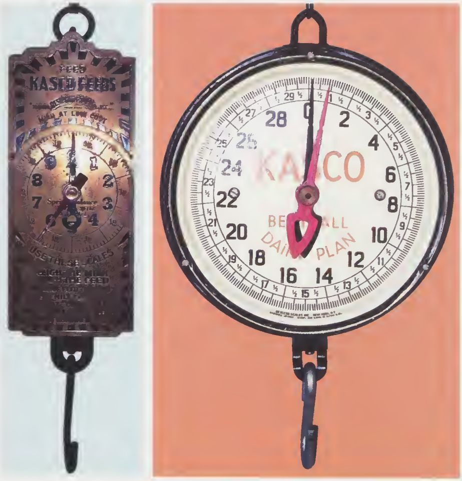
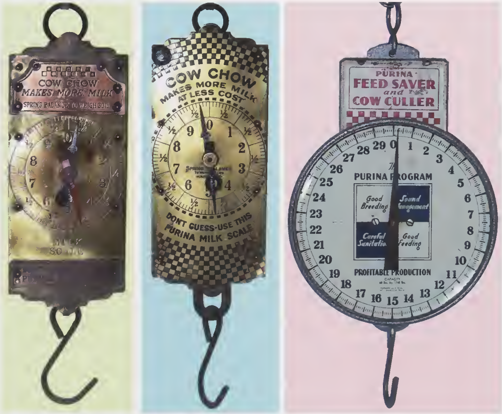


Figure 18 & 18a. ↗↗ Kasco used these scales to advertize their feeds. The brass one at left reads Feed Kasco Feeds Backed by RESEARCH* Proved by USE. Milk at low cost. Spring Balance to weigh 30 lbs Warranted. Use these scales Weigh the milk Weigh the Feed. Feed 1 lb of feed to each 3 to $3^{1}/_{2}$ lbs of milk testing $3^{1}/_{2}$% BUTTERFAT. Consult KASCO DAIRY GUIDE for more specific feeding recommendations. The painted steel scale reads The KASCO Beats All Dairy Plan. [Made by] Detecto Scales Inc. New York, NY. Model 160. Cap 60 Lbs. by $^{1}/_{10}$ Lb. It measures $8^{1}/_{4}$" in diameter.



Figures 19, 19a & 19b. ▲ ► ▲ Purina used several advertising scales for promoting their feeds. They all feature the familiar checkerboard and read as follows from left: 1. Cow Chow Makes More Milk. Spring Balance to Weigh 30 Lbs. Milk Scale. Don't Guess Use This Purina Milk Scale. 2. Cow Chow Makes More Milk at Less Cost. Spring Balance to weigh 30 Lbs. Warranted. Don't Guess use this Purina Milk Scale. This scale was also available in a 60 Lb capacity version. 3. Purina Feed Saver and Cow Culler. The Purina program: Good Breeding. Sound Management. Careful Sanitation. Good Feeding. for Profitable Production. Capacity 60 lbs. by 1/10 lbs. Farmers Milk Scale. Not Legal for Trade.

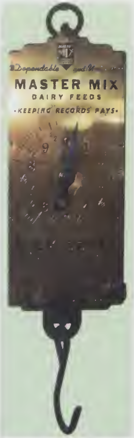


Figure 20. ◄◄ John Chatillon & Sons made and warranted this advertising milk scale for Master Mix Feeds. It reads Dependable and Uniform Master Mix Dairy Feeds. Keeping Records Pays. Milk Scale to weigh 30 LB. Each 10 LB is marked on the slide - The intermediate weight on the circle. The brass face measures 10¼" by 4½".

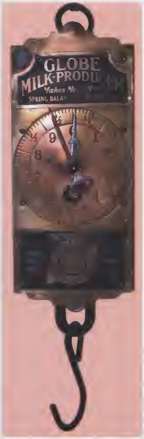


Figure 21. ►► Chatillon probably was the maker of this scale which reads: The Globe Milk-Producer Makes most milk Spring Balance to weigh 30 lbs. Dickinsons Globe Milk Producer. Globe Milk Meter Measures Results. It measures 10¼" by 4½". Two advertising plaques are riveted onto a standard Milk Scale. The lead seal in upper left was affixed by the manufacturer so that the scales could be certified by Weights & Measures Departments.

A Salter brass front spring balance weighing up to 30 pounds is a unique spring balance with two scales – a dial for weights up to 10 pounds and a slide, which indicates the 10-20-30 pound categories. This is also a favorite.

ISASC member, Robert Jibben, reported recently that The Department of Agriculture and others have completed studies to determine accuracy of spring scales, bench scales, and newer electronic and computer measures that dairies may now use. The results of one test by the University of Maryland and University of Minnesota showed these results.

The Dairy Herd Improvement Association (DHIA) in Minnesota had a test with twenty milk scales, which resulted in only two scales showing more than a 1% error. In Maryland when comparing spring scales to bench scales, the scales agreed on 105 of 200 readings. The difference of + or – 0.05 could be due to readability of the scale, only 14 readings yielded a substantial difference. (All less than 1% error).

The Gore Dairy started weighing a bucket of milk on a scale in 1955. In 1977 they switched to a Waikato milk meter and recorded the milk on paper. In 1988 they switched to a Westfalia meter that measures each cow's production when milked. They were only about 95% accurate; by 1992 accuracy was up to 99%. Except for time taken to weigh, the spring scale seems to be competitive for accuracy.

Today's dairy herds are very large

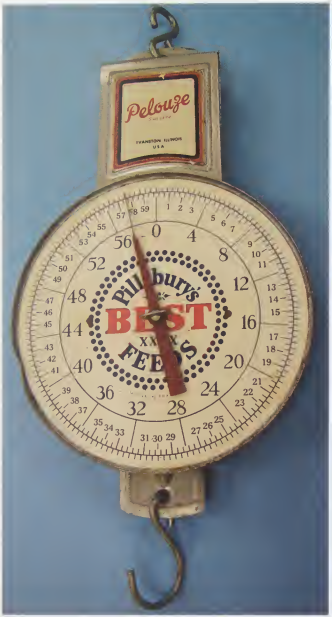
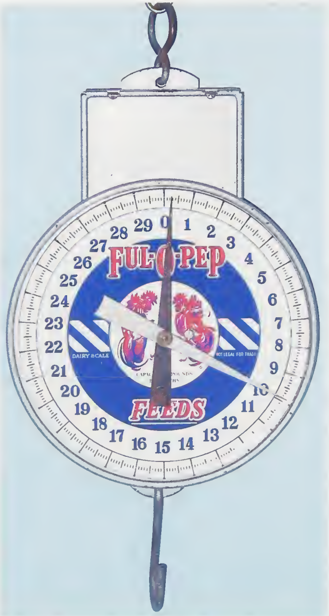
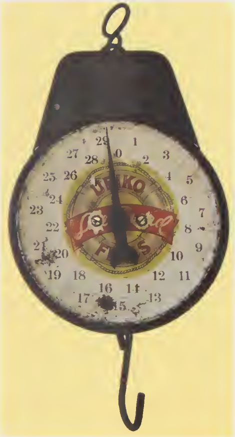


Figure 22 ◄◄ Pelouze Scales of Evanston, Illinois, a Chicago suburb made this scale advertising Pillsbury's best feeds.

Figure 23. ►► The most colorful milk scale in the author's collection is this one advertising Ful-O-Pep Feeds. Pictured on its face are two fighting cocks. It reads *Capacity 60 pounds by tenths. Dairy Scale. Not legal for trade.* It has an H in a circle stamped into the tare hand designating that it was made by Hanson. The dial measures 8" in diameter.



and most milk is metered because of time constraints. Today, milk testing has evolved to provide valuable information about all facets of the dairy industry. It has grown from individual dairymen's personal records to state, national, and worldwide computer based testing and data processing.



Scales – yes, simple spring scales have been fundamental to the progress made in milk production and profitability of our nation's dairy farms.

Notes & References:

1. See EQM pages 2489 - 2492 and 3359 - 3366.
2. Advertisements for Beacon found in the Journal of Dairy Science, 1960 & 1965. jds.fass.org/cgi/reprint/48/10/8.pdf and http://jds.fass.org/cgi/reprint/43/2/14.pdf

Author's Biography:

Leslie N. Firth earned his BS and MS from Penn State University. He retired after a 40 year career as Extension Educator and County Extension Director. He is Past President National Association of County Agricultural Agents and former Editor of "The County Agent." He is the current owner - operator of Firth Farms and current ISASC Treasurer.

Figure 24. ◄◄ A 30 lb. Hanson dairy scale from the 1940s advertises Ubiko Life Guard Feeds.

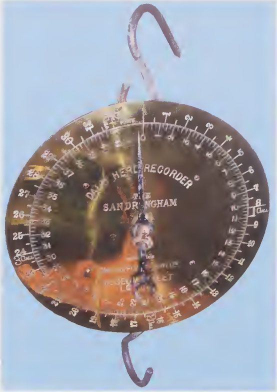


Figure 25. ▲▲ The Sandringham Dairy Herd Recorder was used in the late 1800s in the UK. It was made by the Dairy Supply Co Ltd, Museum St London and its capacity is 41 lbs.

Foot Stool or a Scale??

BY JEROME KATZ

If a scale, is it a Pendulum Platform Balance or a Platform Pendulum Balance?

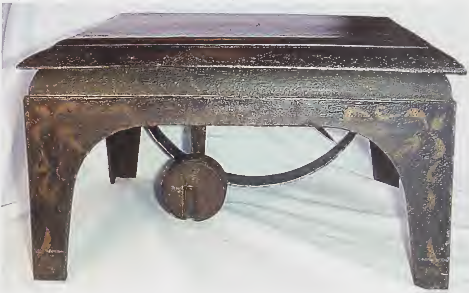
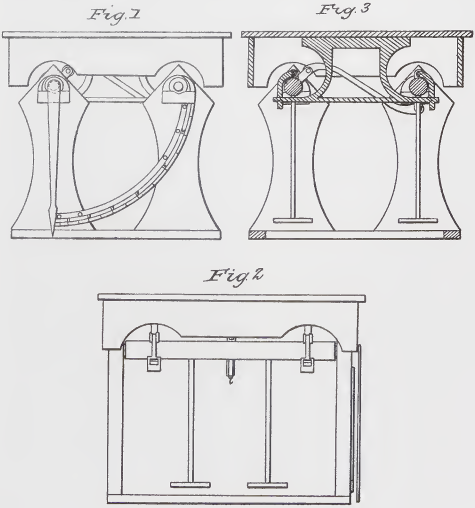


Fig. 1. ↗↗ The foot stool is a pendulum scale. Weights can be hung on the pendulum. This is a back view showing the original hand painted design.

If one stumbled over it one might look down and curse the stool for being out of place (Fig. 1). Dimensions are quite appropriate for a foot stool, i.e. 12½" W x 7½" H x 9½" D. But it's not a foot stool at all. It's a scale! Made with a cast iron frame and a nicely "tucked in" wooden platform surface. On the front bevel of the iron frame is embossed, SMYTH'S PATENT. No other name appears on the scale. Under this front end of the iron frame is a graduated dial forming a semi-circular arc from the upper corner of the left leg to the upper corner of the right leg, and the nadir of the arc is about at floor level. Suspended down from the mechanism under the platform in the middle is a pointer, yes, POINTER. What we have here is a platform pendulum hybrid, or is it the other way around? The dial is graduated with two weight ranges, one from 0-7 lbs and another from 0-50 lbs. How does one employ either set of graduations? One does so by adding or removing a weight to or from a hanging arm. Very much the same concept as the postal pendulum scales with a flip up/down weight.



In searching for SMYTH, I learned his

Figure 2. ↖↖ In the patent Smyth writes *My invention consists of a platform for weighing provided with hangers, when suspended from and combined with the arms of two parallel rockers by means of four links, the said rockers being linked together and provided with weighted arms, operating in connection with the arms to which the hangers are suspended, on the principle of the bent lever, indicating the weight by the gradual elevation of the weighted levers, and as the rockers are linked together it will be immaterial on what part of the platform the article to be weighed may be placed....*

What I claim as my invention and desire to secure by Letters Patent is--

The arrangement of the platform above with hangers suspended at four corners to the two rockers which linked together, substantially as described, when this is combined with the weighted arms on the rockers operating on the principle of the bent lever, substantially as specified.

The patent differs from the scale in that the scale has a semicircular arched dial whereas the patent shows a quadrant dial.

name was David M. and unless there were several with those names at that time period, I believe he fiddled around with sewing machines as well.

I have never seen this scale before, maybe because, when I passed it, I thought it was a footstool.

Why haven't I encountered more of these? If one uses the patent date as a possible clue, 1855 puts it at the time the platform scale giant of all time was belching smoke. The Fairbanks boys were in their formative years selling all over the universe, and perhaps it was more than David M. Smyth could overcome. I don't know that for sure but I truly feel the Smyth scale should have survived for a longer time. It is truly NEAT!

Notes:

1. The term "bent lever" appearing in the patent document is essentially equivalent to "pendulum".

2 The dial and pointer configuration shown in the patent drawing is different than that used in the scale's manufacture.

3. To read more about David M. Smyth see Steve Beare's article on page 3428.

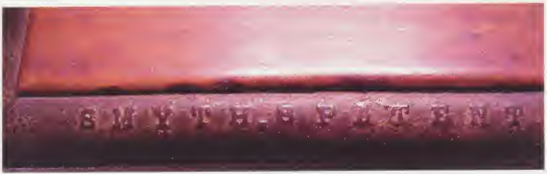


Fig. 3. ▲▲. The name Smyth's Patent is cast into the cast iron platform of the scale. The wood plate is visible in this photo.

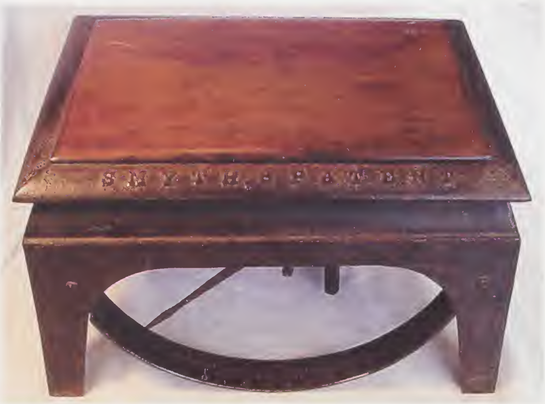


Fig. 4. ▲▲ The front of the scale resembles a wooden-topped foot stool. It measures 12½" wide x 7½" high x 9½" deep.

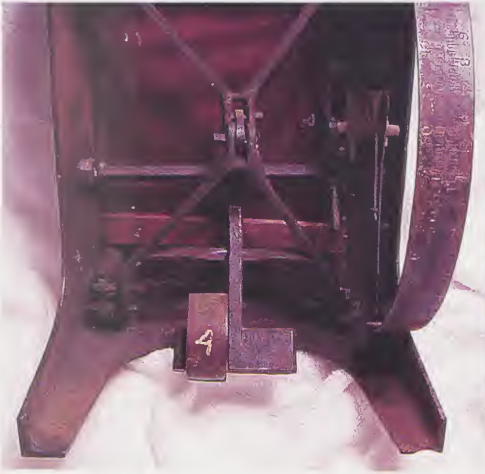


Fig. 5. ◄◄ From the underside one can see the mechanism of this unusual scale. The semi-circular dial can be viewed from this angle. The levers and hangers are also visible. The pendulum is constructed so that slotted weights fit neatly on each side.

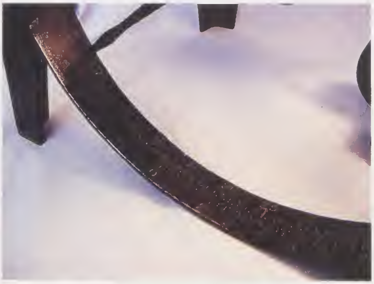


Fig. 6. ▲▲. The semi-circular dial, shown here, has two sets of stamped graduations; one measures 0-7 pounds while the other measures 0-50 pounds. The pointer is shown at top center. The scale is constructed of wood and iron.

David McConnell Smyth-Inventive Genius

BY STEVE BEARE

David McConnell Smyth was a prolific inventor in many areas. He was born in Ireland in 1833 to Scotch-Irish parents, and was the oldest of eight children.[1] According to the 1900 census, he immigrated with his family to the United States in 1833,[2] although the 1850 census for Harford, PA indicates it was between 1836 and 1838.[2] His frequent movements can be traced through his numerous patents.

Smyth's first patent was for Jerry Katz's platform balance, issued in 1855 when Smyth was only 22 years old. He had just married Orianna Slote that year, and they lived in New York City with her family on Fourth street.[3] The only New York city directory listing for him is in 1856, and gives David M. Smyth, inventor, home 451 Fourth.

Smyth gave his home as New York city in his patents through 1865. From 1867 until 1872, his patents list his address as Orange, NJ, then from 1873-1876 in Lynn, Massachusetts, where he established the Smyth Manufacturing Association. He lived in Northwood, New Hampshire from 1876 until 1892,[4] and moved to Pasadena, California in 1893. He established the Smyth Manufacturing Company in Hartford, Connecticut in 1880 to manufacture his book-sewing machines, which revolutionized book production, and for which the term "Smyth sewn" is still used.[5] From 1894 through 1901 his patents list his home as Pasadena, California.

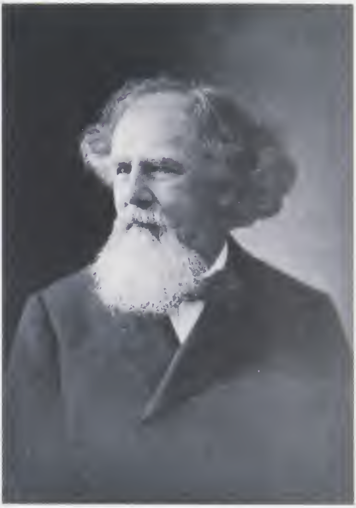


Figure 1. David McConnell Smyth.

A passport application filed in Hartford, CT on March 8, 1889 says he was born on July 3, 1833 in Harford, PA [sic], and planned to travel to Europe.[6]

After I found the above, by using his birth date, I discovered his fascinating short 1897 biography, clearly written by Smyth himself.[7] It is reprinted here in its entirety, and helps to show what a remarkable man he was:

SMYTH, David McConnell, inventor, was born at Newtownards, county Down, Ireland, July 3, 1833, son of John and Jane (Crawford) Smyth. His family comes of the Scotch-Presbyterian stock, which for several centuries has been settled in the north of Ireland, and one of his paternal line founded the famous hosiery works at Balbriggan. When still very young he was brought to America by his parents, who settled in Harford, Susquehanna Co., Pa., and there he was early apprenticed in his father's blacksmith shop. When but fourteen he made his first invention, the gimlet screw-point, now so familiar. In order to collect the money necessary to secure a patent, he purchased a supply of colored lithographs, with which he trudged miles over the country through the snow and storm of winter, and from their sale succeeded in about doubling his original investment. At the opening of severe weather, he began a year's schooling at Franklyn [sic] Academy,[8] and in the following autumn set out for New York city, hoping for an opportunity to develop his invention. Walking *the whole distance, he paid his way by various money-making ventures. At Fishkill Landing he was employed by a blacksmith for over a year, and then started on another peddling tour through New England and eastern New York. He struggled along for nearly two years, in the meanwhile attending school for one term in Erie, and inventing a platform scale. Going to New York city, he found employment in the smith-shop of John Stevenson, the carriage and street-car builder, being soon transferred to the forge room; and presently, from his aptness in the work, was given a forge of his own with wages but little less than the foreman of the shop. About this time he was sought out by Thomas Sloan, proprietor of the screw company, who paid him $1,000 for his gimlet-screw invention.*[9] *The prestige of this success brought him the friendship of Howe, Morse and other Inventors. About this time he obtained a patent for his platform scale, and selling a one-half interest to W. W. Messer for $2,500, they manufactured scales for a while with fair success. Endorsing notes brought him to great embarrassment, but he constantly sought to recoup his fortunes by fresh inventions. A machine for sewing on the soles of shoes failed because he did not think of the seam-channel, from which Gordon McKay realized millions. From his rotary looper for making the twisted stitch manufactured under the name of Wilcox & Gibbs automatic sewing machine, Mr. Smyth also received no profit. His machine for setting "spangles" in hoop-skirts, was bought by Jedidiah Wilcox, for a small sum, and netted a clear $300,000 a year. At the outbreak of the civil war Mr. Smyth was for a while engaged on a contract making tent poles. He then enlisted in the 8th New York regiment, was stationed for several months at Yorktown, Va., and later participated in the battle of Gettysburg. After the war he returned to inventing, producing an improved method for shaving veneer woods, a machine for cutting wooden toothpicks, and the adjustable mitre-box, now in universal use. With his machine for making paper collars, he, in 1862 started a manufactory in New York city, but the business was finally taken by the Metropolitan Collar Co. In this connection Mr. Smyth made several valuable contrivances, among them the use of chilled iron rollers to calender paper. His machine for fancy stitching on shoes netted him large royalties from the shoe manufacturers; but his obliging habit of endorsing promissory notes again embarrassed him seriously. Feeling the necessity of inventing something with some promise of pecuniary return, he set to work on a book-sewing machine, which being patented, was pronounced a success, and in 1879 won the "great gold medal of honor " of the American Institute of New York. In 1880 the Smyth Manufacturing Co. of Hartford, Conn., with a capital of $300,000 was formed to supply it to the trade. Mr. Smyth himself undertook to place it on the market, and journeying throughout the United States and then over the continent of Europe, had fresh demonstrations of its value in ready and extensive sale. He has realized large profits from its manufacture, and now enjoys a well-earned leisure in his beautiful home at Pasadena, Cal. He has just patented (1897) a machine for gathering books for binding, which promises to equal in value the book-sewing machine. Mr. Smyth was in 1889 a member of the New Hampshire legislature; has been a director of the American Association of Inventors and Manufacturers, and first president of the Pasadena Fruit Exchange. He was married, in 1855, to Orianna, daughter of Joseph Brundidge Slote of New York city. Of their four children three sons still survive.*

By 1893, he “retired” at age 60 to Pasadena, CA, but while there became involved in the Orange Growers Association, and also invented several machines for picking fruit.[10]

Smyth was also a poet, and in 1901 published a book about the White Hills of New Hampshire, where he lived for a number of years. Here are two examples from his book,[11] which also contains his portrait (Figure 1):

Saco’s Cradle

The Dismal Pool, another deep recess,
The Saco's cradle, where the new-born river
Feels the first ripple o'er its surface quiver,
And murmurs at the wild wind's harsh caress.

Mount Webster

A Power unmoved, like him of iron will, —
A mighty front of granite, it doth stand
So firm, old time hath wrought it little ill,
And here below, a cloud that fain would rest
In some recess upon the mountain-side.
Two bright cascades come leaping down its breast,
Like rival swains in race before a bride, —
Silver cascade, in wild and laughing leaps,
Bursts forth in beauty o'er the granite gray;
A hallowed light its winding pathway keeps
While prism bloom bedecks its glittering spray!
We feast our eyes from here, they are so plain,
On Webster's breast they hang a silver chain.

A 1912 anthology of White Mountain poetry gives some additional biographical information:[12]

SMYTH, DAVID McCONNELL — born, Ireland, 1833; awarded gold medal of American Institute for invention of machine for sewing books; member New Hampshire Legislature, 1889; The Hermit of the Saco (1901), a long poem dedicated to Hon. William E. Chandler; died, Hartford, Connecticut, 1907.

A 2007 retrospective of the past 100 years of Harford, PA gives Smyth's obituary:[13]

Harford - David M. Smyth, a former Harford boy, died Oct. 11, 1907, at Hartford, Conn., after a short illness of paralysis, aged 74 years. His remains were taken to Pasadena, California, to rest beside his beloved wife and daughter. He leaves four sons, residing in Hartford and Chicago, and three brothers and two sisters in Pennsylvania.

He was quite a remarkable man. At an early age he became an inventor, and during his lifetime controlled about 60 patents. He had a literary bent, having written a poem entitled, 'The Hermit of the Saco', and also a biographical work of himself in his latter days.

A detailed 1971 analysis of the history of machine book production expands on Smyth's 1897 autobiography, and emphasizes the importance of his contributions to the rapid growth of the production of books in the last two decades of the 19th century.[14] The invention and manufacture of his scale, when he was only 22 years old, undoubtedly spurred Smyth on to his later more successful inventions in the area of book sewing.

Notes and References:

1. 1850 census, Harford, PA
John A. Smith [sic], age 37, blacksmith, b. Ireland, real estate $800
Jane, age 38, b. Ireland
David, age 16, b. Ireland
James, age 14, b. Ireland
Eleanor Y., age 12, b. NY
John, age 10, b. PA
Samuel, age 8, b. PA
William, age 6, b. PA
Mary E., age 4, b. PA
Margaret Ann, age 2, b. PA

2. 1900 census, Pasadena, CA.
David M. Smyth, b. July, 1832 [sic] in Ireland of Irish parents, widower, age 67, immigrated in 1833 [sic], naturalized. A 15-year old grandson, George B. Smyth, was living with him.

3. 1860 census, New York, Ward 17.
David M. Smyth, age 34 [sic], inventor, b. Scotland [sic]. Personal estate $2,000.
Oriane [sic], age 29, b. NY
Eugen, age 8, b. NY
David, age 6, b. NY
Oriane [sic], age 4, b. NY
George, age 2, b. NY
Two servants
Living in household of Joseph Slote, age 48, Milk Business [milkman], b. NY, Sarah, age 47, Hugh age 8.

4. 1880 census, Northwood, NH.
David M. Smith [sic], age 46, inventor, b. Ireland, father & mother b. Scotland [sic].
Orianna S., age 40, b. NY
Eugene L., age 22, b. NY
Joseph E., age 17, b. NY
David G., age 16, b. NY
Orianna, age 12, b. NJ

5. Janson, J. W. *Wonders of the Nineteenth Century, a Panoramic Review of the Inventions and Discoveries of the Past Hundred Years*. Chicago: W. B. Conkey Company, 1900, p. 173.
"In 1862 Tanner invented a machine for sewing the backs of books. There are now some thirty different machines, of which David M. Smyth invented, in 1879, the most successful. It costs $1,500. Wire or thread is used. Smyth has forty patents on this machine, which is manufactured by the Smyth Manufacturing Company, Hartford, Connecticut".

6. Passport Applications, 1795-1905; General Records of the Department of State, Record Group 59; National Archives, Washington, D.C. Smyth incorrectly gives his birthplace as Harford, PA, probably for simplicity, but clearly he was born in Ireland.

7. *National Cyclopedia of American Biography*, Volume 7, New York: James T. White and Company, 1897, p. 323.

8. Franklin Academy was located in Harford, PA, and was incorporated in 1830. See James Pyle Wickersham. *A History of Education in Pennsylvania*. Lancaster, PA: Inquirer Publishing Company, 1886, p. 487.

9. Thomas J. Sloan was issued patent number 4704, August 20, 1846 for Improvement in Wood-Screws. Smyth was just 13 years old at the time.

10. Wood, J. W. *Pasadena, California, Historical and Personal*. Published by the author, 1917. p. 490.
"Pasadena Orange Growers Association. Until the California orange grower began to understand the wisdom of co-operation, he was at the mercy of the buyer and the commission man, and he was the underdog all the time. With the organization of the citrus fruit associations of Southern California, the grower began to prosper and the condition of the fruit to improve, as it must, under scientific co-operation and education. Local organizations were the beginning of this larger cooperation, and measurably solved the difficulties that had harrowed the grower. Pasadena, beginning as a fruit growing colony, became aware of these conditions very soon, but did not prepare for them until 1893, when "red ink" balances drove them to it. On December 14th of that year an association was formed in Pasadena, named, originally, the Pasadena Fruit Growers Association with a board of directors composed of C. C. Thompson, David M. Smyth, M. E. Wood, B. F. Ball, James Smith, Byron Lisk and Charles E. Tibbetts."

11. Smyth, David McConnell. *The Hermit of the Saco: Story of the White Mountains*. Boston and New York: The Riverside Press, 1901, 149 pages.

12. Musgrove, Eugene R., ed. *The White Hills in Poetry. An Anthology*. Boston and New York: Houghton Mifflin Company, copyright 1912. Biographical Index, p. 388.

13. *100 years Ago in Susquehanna County*, October 24, 2007. Susquehanna Independent Weekend.

14. Comparato, Frank E. *Books For The Millions: A History Of The Men Whose Methods And Machines Packaged The Printed Word*. Harrisburg, PA: Stackpole Company, 1971.

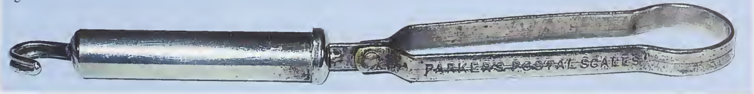
Notes & Queries

FROM BRIAN BRASS

N & Q No. 160

I have been fortunate enough to aquire a "Parker", a small American postal scale with a folding hanger (fig. 1). It has an American patent date of 1881. If you have any information about this Parker item, I would very much appreciate it if you would share your knowledge with me.

Fig 1. ▼▼



Chauncey C & Simon B Parker of Brooklyn, New York were issued patent number 227645 on May 18, 1880, for a spring scale. These small folding scales have been found in several different sizes. Parker's Postal Scales measures 2⅛" folded, 4" unfolded and has an 8 ounce capacity. The postal scale is Parker's only scale manufactured with a bifurcated hook thus allowing an envelope to be inserted between its sides. Parker's Pocket Scales measures 3" folded, 5¾" unfolded and has a 8 pound capacity. Parker's Household Scales measures 4¾" folded , 9¼" unfolded and has a 15 pound capacity. On all of the above the graduations are inside the tube and when weight is applied on the hook the graduations are revealed from the top. The second version of the Parker's Pocket Scales measures 3⅝" folded, 7" unfolded and has an 8 ounce capacity. This is the only version that has the graduations on a sleeve which is friction fitted around the lower ⅔ of the tube so that, when the load is applied, the visible spring is compressed and the weight is shown on the sleeve, starting at the bottom near the hook (see fig 4).

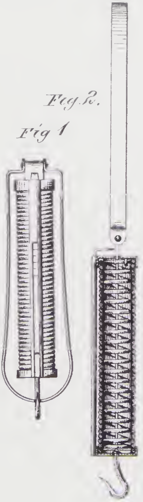


Fig 2 ◄◄ The patent drawing shows a slight difference in the scales that were produced. The hook on the existing scales, when folded, fits neatly inside the handle so that they can be safely stored in a pocket without pricking the user's hand.

Fig 3. ►► The five sizes of Parker scales differ greatly. Pictured are the Parker's Household on the left measuring 4 4" long folded, 3 pocket scales and the diminutive Parker's postal measuring only 2 8" folded as shown.

Compliments of Ben Smith

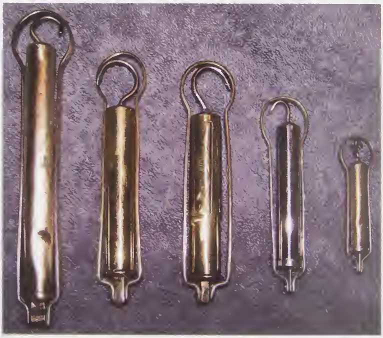
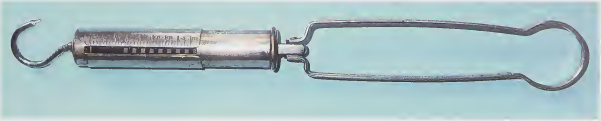


Fig. 4. ▼▼ The Parker's Pocket Scale shown here has a sleeve, with the graduations stamped on it which is friction fitted onto the bottom two-thirds of the tube This could be used to reset the scale to 0 if the spring becomes loose. This is the only Parker to have a compression spring



Number 116 November 2008

INTERNATIONAL SOCIETY OF ANTIQUE SCALE COLLECTORS

A Balanced View

Election of Officers

I thank all of you who responded to the amendment to the bylaws that was enclosed with the last newsletter. I am pleased to advise that the amendment was passed by an overwhelming majority. As a result we will be adding an additional officer to the board of ISASC. The board is recommending the selection of Bill James for this position. Bill has been very supportive to the Society in the areas of convention planning and articles for Equilibrium. If elected he would continue to contribute in these areas as a board member. This new position will be included on this year's ballot for election of Officers.

After serving for six years as treasurer Leslie Firth has decided not to stand for reelection. Les has done an outstanding job over the past six years and our Society is left in a very healthy financial state because of his hard work, dedication and stewardship. We all owe a debt of gratitude to Les and thank him for his service to our Society.

The board feels it is in the best interest of the Society for continuity purposes that the new treasurer be someone who is already serving on the board. Kurt Beyreis was chosen as the board's recommendation to become the next treasurer. On the enclosed ballot Kurt is standing for election for treasurer with the term of June 1, 2009 to May 31, 2012. If Kurt is elected as treasurer he will step down as Vice President. In anticipation of this situation the board will be recommending that Shirley Schmidt be appointed to serve the remaining unexpired term of the Vice President position Kurt currently holds.

The three officers listed below have indicated that they will stand for election.

Treasurer, Kurt Beyreis	(June 1, 2009 to May 31, 2012)
Vice President, Bob Jibben	(June 1, 2009 to May 31, 2012)
Vice President, Bill James	(June 1, 2009 to May 31, 2012)

Included in this mailing of your EQM and this newsletter is a ballot with the three names on it. Also included is an addressed envelope. Please fill out the ballot and return it as soon as possible.

Trip to the United Kingdom October 2008

Well the travelling "Scalie Troubadours" have returned from the UK. Thirty of us met in a little town in the Midlands called Kegworth. Kegworth was our headquarters from which we began excursions everyday. We all had a wonderful time. The hospitality of our UK hosts was truly sensational. A special thanks to Janet and Noel Scarratt, Diana Crawforth-Hitchins and Ray Hitchins and John and Bobby Wintour for giving us the chance to visit their homes and see their wonderful collections. The weather was almost perfect. We had only an hour or so of rain in eight days. More than a few scales and weights found their way back to America. The following diary prepared by Donna Schoenly will give you a better flavor of the wonderful time we had.

8 Fabulous Days

Highlights of ISASC'S UK Trip, October, 2008

Day 1 Thursday October 9, Newark Antique Fair-----A buying frenzy began as we spent the day roaming the booths for scales, weights and anything else that was of interest. Returning to the hotel at 5:00 we mustered up enough energy for a "Show and Tell" in the hotel lobby.

Day 2 Friday October 10, Tour Chatsworth House and Park and the town of Buxton-----Chatsworth House is the home of the Dukes of Devonshire. The original house was the work of Bess of Hardwick in the late 16th Century. Chatsworth was rebuilt in Classical style between 1686 and 1707 and the Library and North Wing added between 1790 and 1858. The Gardens are a treat along with the surrounding park. -----Buxton was a lovely small town housing several antique stores. A few treasures were found before we headed back to the hotel.

Day 3 Saturday October 11, Bosworth Market, Pub Lunch at the Royal Arms Hotel, and the Scarratt home, Lindridge Hall Farm-----Another beautiful day weather wise as we boarded our bus for Bosworth Market. More antiques were found, scales too, as we journeyed through the beautiful countryside. We enjoyed a traditional Pub Lunch at the Royal Arms Hotel at Sutton Cheney. After lunch we visited Lindridge Hall Farm, the home of Janet and Noel Scarratt. We were awed by their collection of scales, weights, pot lids, post boxes and many other interesting items. Janet and Noel were wonderful hosts and served us High Tea with many delicious treats.

Market Bosworth

Newark Antique Fair

Tintern Abbey

High Tea at the Scarratt Farm

Day 4 Sunday October 12, ISASC Europe Fall Meeting-----Another opportunity to "buy" occurred early this morning as many antique dealers set up tables of wonderful scales and weights for us to purchase. Finally the meeting began; highlights were Show and Tell and a talk by Stewart Holfgartner, an antique dealer, about antiquing in the UK. Lunch and the ISASC General Meeting completed the day.

Day 5 Monday October 13, Journey to Wales: Visit the Wintour Scale and Weight Museum in Chepstow and the Tintern Abbey-----Drove through many picturesque towns on narrow roads; even had to go "backwards" on a windy, narrow road to find John and Bobby Wintour's Farm/Museum that he shares with Mark Haines and son. It was worth the ride to see such a special collection of scales and weights. Lunch was delicious and the visit to John and Bobby's home was full of surprises. We saw a marvelous collection of clocks and had wonderful desserts in their charming home. On the way home we stopped at the Tintern Abbey which was founded by Walter de Clare, Lord of Chepstow, on May 9, 1131. The present-day remains of Tintern are a mixture of building works covering a 400-year period between 1136 and 1536.

Day 6 Tuesday October 14, Birmingham-----Avery Scale Museum, the Jewelry Quarter and the Pen Museum-----The Avery Scale Museum was a "Scalie" delight. John Doran, the curator, greeted us and was available to answer any questions that we might have. The Museum is full of examples of Avery scales and weights and an education to say the least. Anyone interested in diamonds or other gem stones had much to look at and or buy in the Jewelry Quarter. Some of us spent time in the Pen Museum learning about "pen nibs" and how to write with the predecessor of the ball point pen.

Scarratt Collection

Wintour Collection

Avery Scale

Crawforth-Hitchins

Day 7 Wednesday October 15, Oxford and Diana Crawforth Hitchins' Home-----It was a treat to visit Diana Crawforth Hitchins' home. Her scale collection is a MUSEUM containing a variety of scales that surpasses most people's dreams. Her knowledge of scales and her willingness to share information was enjoyed by all. In addition she treated us to a delicious lunch of her homemade soup, sandwiches and berry dessert. The town of Oxford is home to Oxford University. Our tour guide treated us to an informational tour and walk of some of the famous Oxford Colleges.

Day 8 Thursday October 16, Hungerford and Closing Banquet----- Hungerford is a charming town with many Antique Shops, but the BEST ANTIQUES were found at Stewart Holfgartner's antique shop "Below Stairs of Hungerford". Stewart's shop has a variety of antiques along with magnificent scales and weights. He was a gracious host with his "discounts" and he encouraged several other antique dealers in Hungerford to be "ready" for our group. -----The Closing Banquet was a perfect way to end our wonderful trip. We were joined by many of our UK colleagues and this gave us the opportunity to thank them for their hospitality and friendship. Those of us who participated in this adventure will cherish these special memories.

Upcoming Convention, Kansas City 2009

The 2009 convention will be held May 15th through May 19th in Kansas City, Missouri. The Convention Chairmen, Bob Jibben and Bill James, have gathered an enthusiastic group to help them plan and implement this convention. One highlight will be the chance to see the Schneiderman, Schott and Kelley collections. Certainly an opportunity not to be missed! The camaraderie prevalent at any convention is something that only increases the joy of collecting. I, and all the board members, encourage you to join us in Kansas City. Please take a moment to visit the ISASC website to see the announcement for the Kansas City Convention (click on 'Annual Convention' and then on 'Invitation: Kansas City, May 2009').

Convention 2010, Portland, Oregon

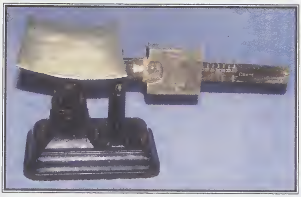
It is time to head back to the west coast. Portland, Oregon, has been selected as the city for our 2010 convention. Convention Chair Dick Clark, along with the convention committee, has planning well underway.

ISASC Website

Carol Hayden reports the addition on the website of a section called "International News". This is an initiative undertaken by Utz Schmidt in an effort to encourage the various international scale societies to share their knowledge and expertise. The first communication is between ISASC and the

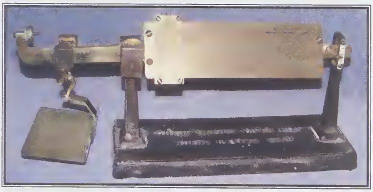
German Scale Society which is now posted on the site. It is Utz's objective to establish a similar vehicle for sharing information with other societies. I believe that he is targeting to bring on either Belgium or the Netherlands next. Utz has put a lot of time and work into this project and is to be congratulated for his efforts. Please take a moment to visit the site (www.ISASC.org). Carol would welcome any comments that you may have regarding our website.

Articles for Sale



<< Fairbanks Revolving Beam Postal Scale, 16 oz. Capacity, Merchandise - Newspaper and Periodical Rates on one Side; Letters, Books & Printed Matter on the other, Patented Dec. 7, 1887.

➢➢Grand Rapids Lumber Tester made by Buffalo Scale Company.



Your Choice $250.
Postage Free.

Ben Smith, 935 Ridge Drive
Auburndale, Fl 33823
Phone No. (863) 551 0992
Email: bsmith1926@gmail.com

Please remember to cast your votes for the election of ISASC officers.

Peter Laycock,
President ISASC